American Aviation

The Independent Voice of American Aeronautics

APRIL 1, 1943

Slow But Sure

Fortnightly Review

ENCOURAGING signs continue to appear in the long and tedious development of military airpower by the United States. The signs are much fewer than the airmen and many laymen would like to see, to be sure, but despite the obstacles and the resistance of old-line ground and naval veterans the armed services are building up a growing and impressive strength.

The promotion of Lieut. Gen. H. H. "Hap" Arnold to the four star rank of General is the first really outstanding military recognition any airman has had in this country. At last we have an airman who cannot be outranked. One of those who supported the late General "Billy" Mitchell and who paid the penalty of being sent to the backwoods for a spell, General Arnold has not only weathered the test of time but has consistently achieved gains for the Air Forces without causing crises or martyrdom. His promotion is a tribute to patience and perseverance.

In newspaper headlines and in the mind of the public, airpower has proved its case. The blasting of a 22 ship Jap convoy in the South Pacific, entirely by landbased airplanes, was a signal demonstration of what airpower can do—and of what could have been done in the Philippines had we been awake and prepared. The day when doddering seadogs can still debate on the quaint subject of airplanes vs. ships is gone. There is no debate left.

In the European theater the performance of the RAF Bomber Command is an outstanding achievement of historical significance and importance which will be emulated, we trust, by the U. S. in due course. Devastation by concentrated raids on German industry and cities will prove to be a great and abiding factor in the ultimate break-up of German morale and destruction of sources of supply. Would that this country could have concentrated more on big bombers! Would that we had started earlier to concentrate on destruction of German cities instead of diverting so much production facilities to other and less important items!

But now the U. S. Army Air Forces is beginning to show its strength over Europe and there are signs that in a few more months we

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International News Photo

Kaiser Takes Over

H. J. Kaiser, right, Now Directing Brewster Aeronautical, and Frederick Riebel, Jr., New President, Are Interviewed.

Late Bulletins

NWA Asks Line to Orient

Croil Hunter, president of Northwest Airlines, revealed in Minneapolis Mar. 26 that NWA is informing CAB of its intention to file application for a 10,000-mile route from Washington to Calcutta via Alaska and China. The application comes at a time when there is speculation in the industry regarding routes from Alaska to China. Some reports have indicated that regular service may already be operating from Alaska to Siberia. Also to be asked by NWA will be a Seattle-Anchorage route, over water, thus not requiring Canadian permission. For post-war operation, the company asks an Alaska-Shanghai-Philippines line.

Jouett Heads Bellanca

Col. John H. Jouett, executive vice president of Higgins Aircraft, has been elected president of Bellanca Aircraft Corp. In the election, the second within eight days, other new officers were also named.

Trend of The News

Outlook For Transports: An estimate printed by a popular national publication that 10,000 transport planes will be built this year is regretted by responsible airmen who fear the public will be misled on what may be expected of the airlines and the services on cargo and personnel transportation nine months from now. The airlines generally are considered doing an excellent job with the few new planes they have received from the Army for war cargo contract operations, but could do much better with even 25 more. The Army Air Transport Command is struggling with knotty operations problems although it is moving more stuff on global air routes than would have been thought possible a year ago. Meanwhile, the Services call for more transports for the battle zones exclusively, and our allies demand more on Lend-Lease. All of these factors, therefore, make it clear that we won't have flying over global routes by next January the great transport airmada the public envisions. Competent observers express the opinion that our 1943 transport output will be near 5,000, the great majority of twin-engine variety.

March Plane Production: Although Washington materials officers in WPB and the Army Air Forces are fighting as they have never had to fight before to keep up the flow of components into aviation plants, consensus is that March production of warplanes should rise from 5,000 and 5,400 levels to above 6,000. The two or three extra days in March, over February, is an element in itself.

The current changeover to and revisions in CMP are bringing gray hairs to industry and government men alike, and there is serious talk of the possibility that some plane plants may have to lay off workers for a short time if materials flow is interrupted.

Build U. S. Plane in England? High government officials probably will deny it if questioned, but serious study has been made recently of a plan to produce a small, well known U. S. combat plane in Great Britain. The type cannot be disclosed but it is one of the few American models highly praised in England so far. Responsible circles still contend, however, that no British warplane will be manufactured in this country, and add further that the idea was never even studied, despite considerable gossip to the contrary.

British Railroads Get Airlines: Those who urge a close study of current events in Great Britain to learn what will be happening in our own country one, two or five years from now point to the recent activity of British railroads in air transportation.

The Great Western, London Midland & Scottish, and the Southern Railway groups have collectively acquired control of British & Foreign Aviation, Ltd., G. W. & S. Airways, Ltd., Isle of Man Air Service, West Coast Airways, Olley Air Service, and Air Commerce Ltd., all either operating, owning or controlling British Isles home routes. The number of "independents" left is negligible.

(Turn to page 6)

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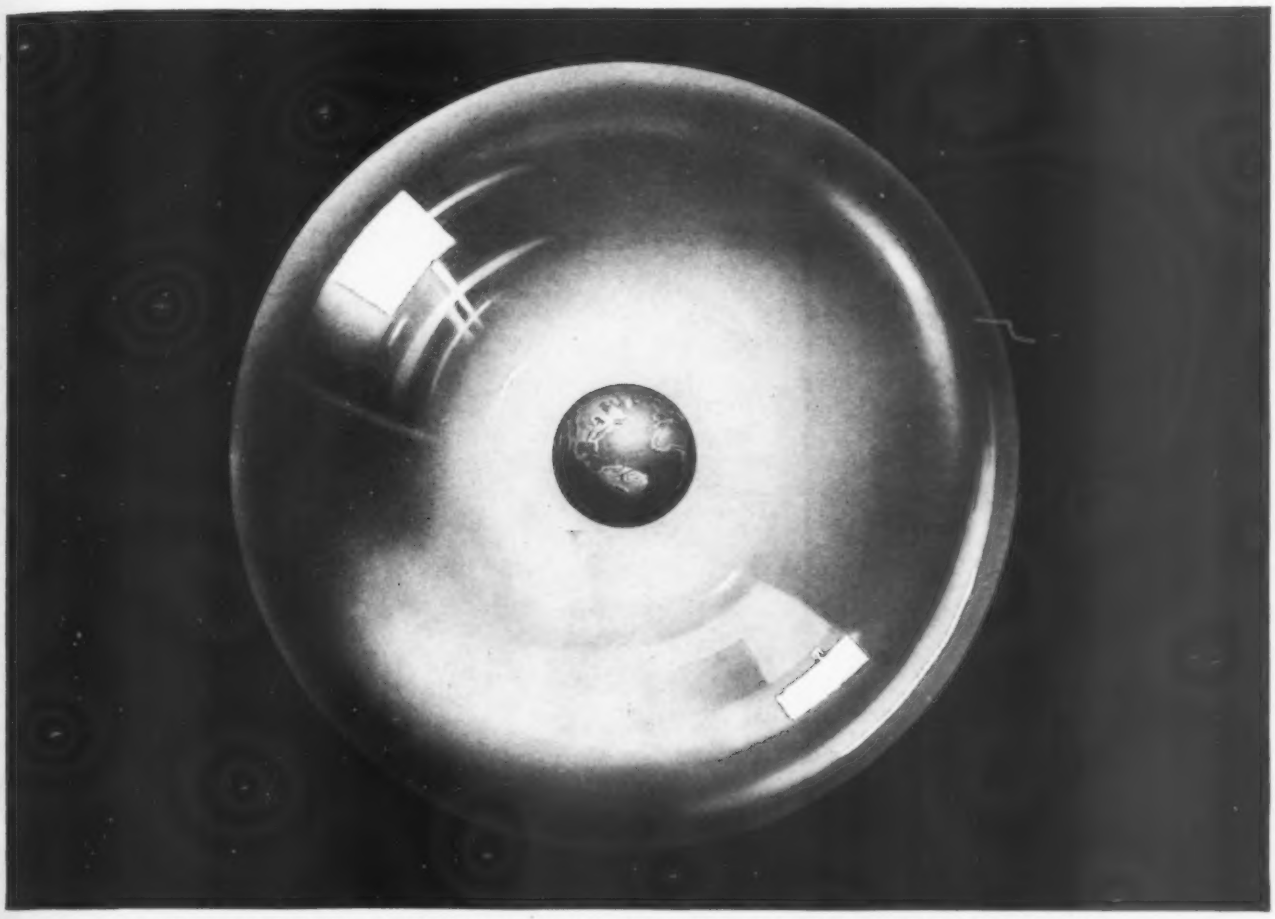

WE SUBMIT THIS CONCEPTION OF OUR CHANGED WORLD AS THE BASIS FOR OUR

WAR-THINKING

We exist upon one globe, and inside another globe.

Our planet-earth is the center of a larger air-globe . . . It is like a small spherical kernel within a large spherical shell. Both globes, as one unit, follow the same orbit. We take our air with us—and always have.

The new factor that changes our world is the *use* of air as the only *universal* realm for transportation. In ratio as we *do* use it, we change the proximity and accessibility of all places, and effectively we make the world smaller.

* * *

With this conception as the basis for our war-thinking the world *could* make Peace permanent.

Not that human nature will change that much, that quickly, but because, after centuries of recurring wars, the human race now does possess the physical means of *enforcing* Peace.

* * *

Consider the *protective* possibilities of air:

Since air is *everywhere,* it is not possible for any person, clique or nation to hide anywhere upon the earth from air surveillance. If we have mastery of the air, we can reach the spawning grounds of the war plotters and prevent their preparations for war.

Consider the *productive* possibilities of air:

Today, *all* world markets are much *closer* neighbors than cities of the United States used to be. Air transportation makes possible a quicker post-war rehabilitation and a better world economic system.

* * *

World War I was a localized war. It was won by *surface* strategy. World War II is a *universal* war where there are no safety zones, because every inch of the earth's surface is a potential target for bombs from the air.

* * *

The world geography of 1918 is as obsolete as that of the ancient flat-world. That is why the post-war world will present problems as great as does this war-world—and why we will need aviation more *after* this war than during it.

After the Peace Conference we will have a much more *vulnerable* nation, because it is no longer an isolated piece-of-land, but an integral, inseparable and indivisible part of today's air-world. The *waters* of our two oceans could no more prevent air attack than did the *cement* of the Maginot Line.

* * *

The pre-air conception of the world was one of nations protected by vast oceans. All world economic, political and military thinking was predicated upon that surface-conception. Aviation has turned the page on that era!

Of course nations will continue to have boundary lines and will use land and water methods of transportation. But aviation changes all relative values; it nullifies the buffer nations, and makes possible that which has, for all man's prior history, been impossible.

* * *

Since it is primarily the use of *air* that makes this a Global War, it must follow inevitably that a *dominant* use of air can maintain Global Peace.

* * *

The United States has the beginning of the aviation machinery necessary to implement its democratic ideals and prevent a repetition of the war-crime by any nation.

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A. N. KEMP
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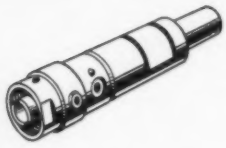

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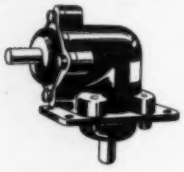

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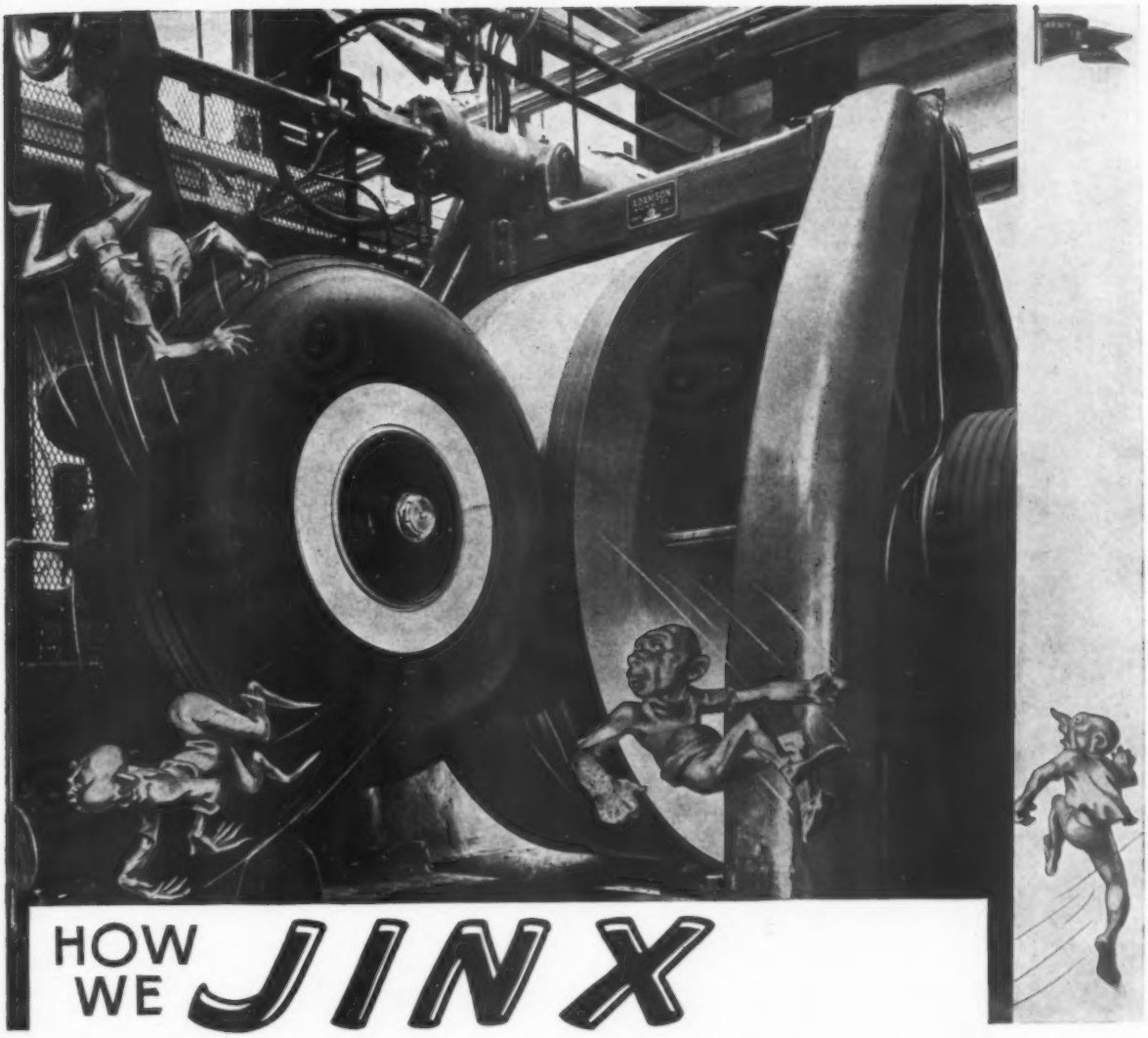

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Trends

(Continued from page 1)

Chamber Streamlining: Under its two highly respected hel men, James P. Murray, president, and Irving Taylor, general manager, Aeronautical Chamber of Commerce emerges from its streamlining pro with a personnel list of 22 instead of the 49 of last October, and the ann payroll now $90,000, against a former total of $225,000.

C. Scott Hershey and Albert W. Clayton, as manager and assis manager, maintain the new Information Dept. John Howard Payne comes manager of the new Economic Development Dept. E. W. Norri acting manager of the Technical Dept., and Harry R. Brashear manages Traffic Dept. Legal counsel is Henry G. Hotchkiss. Elva Schwamlei administrative assistant to the general manager.

Robot Planes: Army Air Force officers were surprised when censo ship recently cleared a story for a Washington newspaper descri "target" airplanes of 8 ft. span, operated by radio control, being used maneuvers with ground troops. Two or three companies are turning the "mosquitoes," including at least one grown-up aircraft firm. Bef the war is over you will probably hear much more about robot planes, all of which will be as small as those now in the public eye, nor stricted to "target practice." The stories in the pulps a few years ha about pilotless flying bombs being directed by radio squarely into ene ships or bases are not as far fetched as they used to sound.

Wasted Training in Gliders: Army training spokesmen week promised they will call all glider reservists to active duty "wit a short time" after the Civil Aeronautics Administration, through its Training Service, sends out a letter to the pilots offering them duty aviation cadet ground crewmen, air crewmen, or offering more traini courses—in such specialized fields as aerial gunnery, navigation, and like. By this action, the Army serves notice that the youths' training gliders is not to be used at all. As reported in this column in the M 15 issue, these reserves have been without assignments for months. Th pay, which had not been forthcoming at the time the last issue *American Aviation* went to press, has since been received.

WTS Schools To Dwindle: The number of War Training Servi (CPT) schools with CAA contracts will decrease from now on, hi officials admit. As reserves who volunteered before the Dec. 5 ord against recruiting gradually are absorbed into the pilot training syst the Army (contrary to CAA's policy of using many schools throughou the country) will centralize more cadets in fewer schools. Thus eventu shutdown of most small flying schools now appears certain. About 1 schools now are earmarked for the new Army-WTS program.

PAA's U. S. Ownership Ideas: Rumors that Pan Americ Airways has proposed or will propose that the government purchase 4 of its stock to form a quasi-governmental flagship airlines for all U. international operations have been going the rounds in New York a Washington. While admitting the existence of such reports, PAA offici now refuse to comment. This is not the first time such a proposal h been discussed, and such a plan has been in the background of PAA polic for several years, coming to the surface in more or less direct ratio w the threats of competition from other U. S. carriers. Such a proposal a single U. S. international operator, with the government owning a su stantial block of stock, would fit in somewhat with European practices, well as with certain Administration plans by which the government i partnership with private enterprise in many directions. No such propos is likely to succeed without a struggle, however, and loud and mighty re percussions in Congress seem inevitable.

Washington Sidelights: Like its more elaborate sister publica tion, *Air Force*, the *Technical Data Digest* of the Materiel Center at Wrig Field has gone on a monthly basis and emerges in new cover and improv format, although still lithographed . . . Civil Air Patrol will go under Arm control any minute now, officers say. Although War Dept. spokesmen claim no CAP operations will be discontinued, Washington is confident will be only a matter of time until one activity after another will b lopped off . . . The Australians are looking for a top-flight aircraft execu tive for their supply mission assigned to the U. S. . . . Consolidated Vult Aircraft Corp., whose subsidiary is operating a trans-Pacific ferrying route has its eyes on post-war commercial service there as well.

British officials here report a new French helicopter, the Gyroplan SE-700, an experimental model. It is equipped with a 220 or 330 hp engine, has a range of from 375 to 500 miles, with a maximum speed of 135 mph. . . . You'll hear soon about a new corporation organized by pilots and other crewmen of RAF Air Transport Command (formerly RAF ferrying command) who fly the North Atlantic. Many are Americans. Plan is to organize so they will be ready to offer themselves to new trans-oceanic airlines for immediate service after the Armistice . . .

ROBERT H. WOOD.

XUM

For every hero—one Blondel

BUT for the faithful Blondel, Richard the Lion-Hearted might never have returned from the Crusades . . . he would have died a prisoner in the Tyrol.

Today's heroes have their "Blondels," too . . . in the plants and factories that supply the equipment for war.

At Fleetwings, for example, the "Blondels" are building planes . . . sturdy Fleetwings' basic trainers for the Army's fledgling bird-men. And they are building parts . . . wings, fins, stabilizers, ailerons, tail assemblies, fuselage sections, and hydraulic equipment for many of America's bombers and fighting planes.

Working with practically every aircraft material . . . with stainless and other steel alloys, with aluminum, with plywoods . . . the men and women at Fleetwings are fighting a supporting action that's felt all the way to Berlin, Rome, and Tokio.

But today's production, vast and important as it is, is not all. The Fleetwings' pioneering that developed the first all-welded, stainless steel military plane is continuing . . . unabated. Victory will find Fleetwings qualified and ready to serve as "Blondel" to the air needs of the Peace.

(Plant No. 1)

FLEETWINGS

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BRISTOL • PENNSYLVANIA

Editorial

(Continued from page 1)

shall be able to rival the British in destroying Nazi nerve centers.

And not the least encouraging sign is the manner in which veteran airmen—including virtually all of those who aided the late Billy Mitchell—have risen in the ranks and achieved important assignments. All of them from Frank Andrews to Spaatz to Eaker to Kenney are in assignments that mean something.

Many of us are prone to be impatient about the tardy acceptance of airpower. But men's horizons broaden slowly. The road is tortuous. Even by the end of this war we shall not have the real force of true airpower that could have been in existence long ago. But progress is being made. This year, and before long, we shall see more and better demonstrations of what the airplane can do. However late, the recognition and acceptance are coming.

A Grave Warning

THE THREAT of government-owned international airlines and complete elimination of private enterprise from this great potential field of constructive commercial expansion is not to be overlooked these days. Much less should such a threat be discounted. It needs the closest watching of any aviation development on the horizon.

In this country there have been a few weather balloons cast into the skies to test sentiment, such as Vice President Henry Wallace's article in the *American Magazine* advocating United Nations airlines circling the globe. But nothing quite so concrete has been discussed here as has come out of certain quarters in London. In a speech broadcast from London over the Columbia Broadcasting System, and quite overlooked in the daily rush of events, Prof. Harold J. Laski minced no words in advocating government-owned airlines.

Aviation folk do not know much about Prof. Laski, but he is a well-known figure to Washington New Deal circles—the Harry Hopkins and the David K. Niles and the Adolf Berles and the others who are endeavoring to shape the destiny of the United States without recourse to the wishes of the American people. Hark to what Prof. Laski told the United States by radio:

"There is grave danger that in things like transportation—above all in the air—national vested interests will force a return to competition where the facts cry out for a unified and international ownership and control. If Nazism has taught us anything, it ought to have taught us that the way out of war lies through an expanding economic system, that its contraction means fear and insecurity and, in the end, class conflict and international conflict.

"That means international planning to raise the standard of life, above all in China and India, in Africa and southeastern Europe. If their only road to well being lies through the harsh way gotten in the last generation by the Soviet Union, what hope is there in the next for the youth of your country and mine? But in any profound way, international economic planning is not attempted. It's a phrase and a peroration. I even read speeches by American statesmen which suggest that it is neither desirable nor possible. They speak of an individualism, which has been bankrupt these 30 years, as though it contained the magic key to unparalleled prosperity. Can we not make up our minds that the mere competition of private interests has been once and for all proved incapable of giving us a well ordered commonwealth?"

What words are these coming to the United States from this New Deal confidante in London? Since when are airlines to be slurred with the phrase, "vested interests"? Since when has air transport competition by private industry been anything but productive of progress? And since when has any government enterprise, especially transportation, been anything but a burden the taxpayers and a symbol of static stultification?

Prof. Laski has warned us in effect to be on our guard agai a gigantic effort to eliminate private enterprise from the in national air transport field. This country has the most to lose least to gain by any such maneuver. It would mean placing great United States on a par with *each* separate small Europe country, the importance of which we have always over-estima in the world picture. We have seen these portents before duri the past decade. We know that if Prof. Laski so boldly advoca government-ownership of air transportation from London over U. S. broadcasting network, there will be echoes from vario quarters in this country.

Duplication of Research

POST-WAR planning has been going on at white heat tem of late and we are pleased to note that William A. M. Burde the special assistant to the Secretary of Commerce in charge aviation, is taking steps to prevent mass duplication of air tran port research by setting up a procedure by which all such studi might be filed on a confidential basis with CAA and CAB.

Research on air transportation is currently being carried on b airlines, by manufacturing companies, by Air Cargo, Inc., by th Air Transport Association, by the Civil Aeronautics Board, b several universities and by other organizations.

As one official remarked, he would be willing to wager tha the basic statistics of commodities that can be moved by air a various rates have been gone over by at least a dozen competen groups. With such a great shortage of air transport personnel it would seem desirable to eliminate or reduce such duplication With the cooperation of CAB Chairman L. Welch Pogue and Mr. Burden in the Department of Commerce, some modicum o order might be brought out of the present scattered and duplica tive efforts.

No. 1 to Moscow

A STUTE Sam Solomon caused plenty of eyebrow-raising and even some chuckling when he filed an application for North east Airlines, of which he is president, to fly scheduled servic to Moscow and a score of European cities and capitals. Mos power to him. Astute Sam Solomon knows that if private indus try sits quietly by, biding its time and being shy about post-wa plans, that government-owned airline operation is just aroun the corner. Outcries are few when government pioneers wher private enterprise has never evinced any interest, but there wil be outcries if government attempts to take away something tha private enterprise wants and is capable of performing. If privat initiative is to maintain its rightful place, it had better not la behind too long, or too long may turn out to be too late.

Research and Planning

AN ENCOURAGING sign of the times is the interest in research being displayed by United, TWA and American. All three companies have developed, or are now in the process of developing, research organizations to study, primarily, problems anticipated in the post-war. All three airlines are drawing into their respective organizations men who are well equipped to study air transport and air cargo problems, or they are training men from within their own staffs. At United, Hal Nourse is in charge. At TWA, the research and planning is being centralized under E. Lee Talman. At American this work is being developed under the leadership of Charles Rheinstrom. The groundwork being laid today should bring fruitful results tomorrow.

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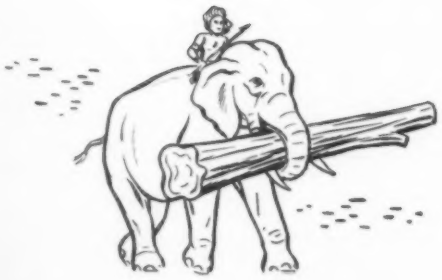

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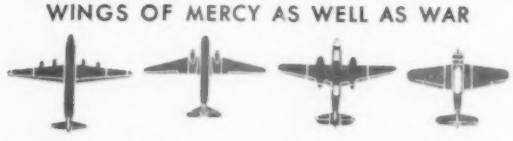

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Congress Cool to U.S.-Industry 'Partnership'

Planning Board Urges Federal Post-War Plants

By CLIFFORD GUEST

RECOMMENDATIONS for post-war government "partnership" in industry—with special reference to aircraft construction and air transport—embodied in an over-all report of the National Resources Planning Board have been sent to an unresponsive Congress by President Roosevelt.

So far, nothing has happened to indicate that legislation to implement the report will be forthcoming this session.

In the aviation industry the report was viewed with some concern as a possible forerunner of unprecedented government control over millions of dollars worth of plants financed or expanded with government aid under the stress of war conditions.

For such a controversial proposal, the reaction in Congress was decidedly cool and it brought only a brief flurry of discussion on Capitol Hill. Underscoring its expressed desire to see economic and social planning done under the initiative of Congress, the Senate set up a 10-man planning committee which will study the voluminous NRPB document but will not restrict its inquiry to that field.

May Remain A 'Dud'

Net result was that many informed observers in Washington expect the government-in-industry plan to remain a "dud" for months to come, or at least until the White House feels the time more propitious to ask for legislation. At a press conference following submission of the NRPB report, President Roosevelt indicated he would leave it for the time being in the hands of Congress. Later, members of the Planning Board said they knew of no Administration plan to submit early legislation requests.

As though emphasizing the "stake" of the government in the aviation industry, Secretary of Commerce Jesse Jones issued, a few days after the NRPB report was made public, a statement reporting that Defense Plant Corp. has invested $2,657,112,000 in aircraft and aircraft accessories plants—which he said exceeds by about 10 times the entire assets of all aircraft manufacturers before the war. His figure included facilities at 51 plants costing $483,483,000 making airplanes, including bombers, fighters, cargo planes, trainers and gliders; and 344 plants costing $1,965,351,000 making aircraft engines and other aircraft parts.

In industry, the section of the Planning Board report given the closest scrutiny came under the heading of "Demobilization of War Plants, Machines, and War Contracts."

The board recommended:

Mixed Incorporations

"Extension and new forms of joint private and governmental partnership, through use of mixed incorporations, granting or insurance of loans, or other joint ventures, etc. Government is already taking considerable part in the management of the many war industries which have been greatly expanded by the use of government funds. Consideration should be given to the desirability of various types of partnership in the direction of those industries of crucial importance in both a wartime and a peacetime economy and in which the government has made great investments. In this category are aluminum, magnesium, shipbuilding, and aircraft. Government has a direct responsibility and should participate in the decisions as to what areas and what concerns should continue to operate in these industries."

The board added that other fields in which this type of "joint" enterprise "could be used" for new operating units are urban redevelopment, housing, transport terminal reorganization, air transport, communications, and electric power.

Asked for amplification of this phase of the report, Dr. Glenn McLoughlin, chief of the NRPB Industrial Section, asserted in a statement to *American Aviation* that the Planning Board did not contemplate government "partnership" in the principal airplane factories, but only in "marginal" or surplus facilities for which the need will be uncertain after the war.

Stating he was skeptical about the mixed-corporation idea, Dr. McLoughlin said he felt all companies should have full opportunity to exercise their options on aviation plants financed or enlarged with government funds. "We hope something can be worked out," he said, "to avoid dismantling of these facilities, all of which are good."

No Blueprint

When asked regarding specific plants and specific areas, Dr. McLoughlin said the Planning Board at no time had drawn up any blueprint as to which aircraft plants should be left in operation, or in what areas of the nation peacetime aircraft factories should be permitted to continue after the war.

He was asked if the industry had been consulted in preparation of the Planning Board's report or the development of background data.

"We have talked with a number of manufacturers in the East," he said, "but the West Coast manufacturers are a long way off and we could not get to them so easily. We used no questionnaires."

Dr. McLoughlin said the Board had no figures regarding the likely percentage of present aircraft-producing capacity which could effectively operate under the post-war economy.

"However, in talks with aircraft manufacturers we have found estimates very low as to the percentage of production and labor they feel they will be able to maintain after the war," he said.

Harold Merrill, executive officer of NRPB, told *American Aviation* that the Board itself would propose no legislation, that its job is merely to coordinate planning. "We are not trying to lay down blueprints," he said, "but people ought to be discussing these things, thinking about them and making up their minds. We must come to some conclusions on what we can do and can't do. It has to be somebody's job to bring together ideas which have never been tested out against each other."

Meanwhile, on Capitol Hill it appeared that action will not be hasty. The Senate called up a resolution which had been pending for some time to authorize a Senate Committee on Post-War Economic Policy and Planning. Vice President Wallace appointed the 10-man group and it met only once within the fortnight, merely to elect Sen. Walter F. George (D., Ga.) chairman of the Finance committee, as its chairman. Action has not yet been taken toward setting up a staff by the committee.

Committee Members

On this committee in addition to Sen. George are: Alben W. Barkley (D., Ky.) the majority leader; Charles L. McNary (R., Ore.), the minority leader; Carl Hayden (D., Ariz.); Joseph C. O'Mahoney (D., Wyo.); Scott W. Lucas (D., Ill.); Claude Pepper (D., Fla.); Arthur H. Vandenberg (R., Mich.); Warren R. Austin (R., Vt.); and Robert A. Taft (R., O.).

To this extent the Senate responded to President Roosevelt's earlier challenge that Congress should either provide for his Resources Board or provide some alternative procedure for post-war economic and social planning. The Senate Appropriations committee has not yet scheduled hearings on the Independent Offices Appropriation bill from which the House last month stripped $1,400,000 for NRPB's operation during the next fiscal year. Unless some provision is made for funds, NRPB will go out of existence on June 30.

Chief figures in NRPB are Frederic A. Delano, uncle of the President and one-time member of the Federal Reserve Board and president of the Wabash railroad; George F. Yantis, attorney and former speaker in the Washington state legislature and longtime chairman of the Pacific Northwest Regional Planning Council; and Charles E. Merrian, professor of political science at the University of Chicago. Advisors to the Board are Beardsley Ruml, chairman of the Federal Re-

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Official Navy Photo

AAF Visits Navy: The Navy doesn't say why, when or where, but this picture shows Army Air Forces P-40Fs about to take off from a Navy aircraft carrier, "on a joint Army-Navy assignment." Those are extra gas tanks between the wheels.

Expansion of Flight Strip Network To Continue; Post-War Utility Seen

FLIGHT strips built for wartime military purposes have proved so successful that they already are taking a definite place in the picture of post-war civil aviation planning.

Both civil and military authorities are now looking forward to a continuing long range development after the war which will gear hundreds of such landing facilities into the highway transportation program.

With initial funds exhausted in the first practical test of the "bargain counter landing field" idea, it is anticipated that appropriations will be made soon to continue rapid expansion of the flight strip network this year.

These facts were disclosed in a survey by *American Aviation* which emphasized that from Congress on through the administrative, planning and engineering agencies a notable spirit of harmony and cooperation exists in regard to flight strip development.

Although many phases of the program are still in the class of restricted military information, the consensus appears unmistakable that flight strips have proved their worth and that factors of cost and usefulness are satisfactory.

Half Completed

Built with funds under the original $10,000,000 authorization in the Defense Highway Act of 1941, approximately one-half of the flight strips authorized to date have been completed and are in use, and the remainder will be completed within the next few months.

Because of the military nature of the undertaking, officials of the Army Air Forces and the Public Roads Administration declined to discuss an additional appropriation.

"Flight strips now in operation have justified everything we expected them to do," said Fred E. Schnepfe, special engineering consultant to the administrator of the Federal Works Agency and director of the flight strips division, Public Roads Administration. "From operational and engineering standpoints they have proved entirely feasible—and distinctly successful, particularly considering that these facilities are built at a cost so much less than an airport."

He said the first appropriation was made with a view to taking flight strips out of the class of something "that had just been talked about for a long time" and see how they would work out. With their value now proved, there is a definite need for more for military purposes. He said that all of the initial funds are represented in contracts already made.

Foreseeing transition of these facilities from present military use to post-war private and commercial use, Schnepfe said, "We are trying to locate them where they will do the most good after the war."

Summing up the over-all picture and the future program, Schnepfe said in a prepared statement:

"The use of flight strips in the Air Forces program of landing facilities indicates that flight strips will become increasingly more important, particularly in the training of the vast numbers of flight crews that the Air Forces hope to turn out within the next year.

'Definitely Justified'

"The increased tempo of the training program plus the development of new flight techniques, such as instrument landings, will necessitate the construction of a number of auxiliary landing areas for many of the major training and operating bases . . . They are definitely justified as a war measure alone . . .

"Every effort has been made to locate the flight strips, now under construction, in areas where they would have real post-war value. Post-war considerations were of course secondary to the present military needs but in a majority of cases the flight strips have been so located as to fit into the planned expansion of air transport and private flying activities.

"The military flight strip is constructed to carry heavy planes. This class of flight strip if properly located will fit into the plan of expanding civil air transportation as the landing field for small centers or groups of small centers of population."

Discussing the pre-war demand for feeder airline routes and the desire of off airline cities of all sizes for air service, he said:

"Up to the present time no definite action has been taken with regard to providing landing fields and other ground aids for these routes which are sure to come at the close of the war.

"A review of these route applications with respect to the terrain and wind conditions, around many of the cities that will receive service, and with respect to the economics of providing air service to small communities, coupled with a knowledge of the types of planes that will probably be used in this type of air service, indicates that in many instances the installation of flight strips along the main highway adjacent to a small community or along a highway and equidistant from several small communities will be the wisest course to pursue in providing landing facilities for these communities and to provide air route facilities along the highway as well.

May Serve 5,000

"The scope of this air transport expansion and its effect upon the flight strip program can best be illustrated by pointing out that at the start of the war there were less than 500 cities receiving some kind of air service while in the post-war period there is every possibility of bringing complete air service to as many as 5,000 communities."

Predicting that plane manufacturers will keep their wartime plants at the highest possible level of production and that due to the obsolescence factor many light type aircraft will be placed on the market at the close of the war at low cost, Schnepfe added:

"As a result of this trend we will find that many people who now drive from city to city and to parks, the seashore and to the country on business and pleasure, will use a small plane in these journeys. To serve and protect the private flyer it will be necessary to provide flight strips along the main highways and other flight strips at the small communities that cannot justify an airport."

Schnepfe contends it is a responsibility of the Federal government to see that air transportation is not retarded through lack of ground facilities. He points out that the volume of air mail and many forms of cargo is increasing at an accelerated rate and that after the war the air transportation network will have to be increased enormously with many new trunk lines and feeder routes.

The part that the flight strip program is expected to play in the post-war plan of transportation he summarizes as follows:

1. Provide landing facilities for the civilian flyer.
2. Provide basic landing facilities for small cities or groups of towns for air feeder service and air cargo.
3. Provide auxiliary landing facilities for all types of aircraft.

He told *American Aviation* that some of the long runways already built under the program can take "bigger loads than we now have. Most of them have a 40-to-1 glide angle reaching two miles out and fanning to a width of 4,000 feet.

In Foreign Areas

Under present procedure the Army indicates the general area in which it desires flight strips for its use. AAF engineers then go over prospective sites with Public Roads engineers and once the site is approved the design and construction of the strip becomes the responsibility of the Public Roads Administration which in turn has the cooperation of the state highway departments involved.

Under the military program, flight strips have been extended to foreign areas. On one overland route of the Air Transport Command, it has been disclosed, it was decided to augment the few available airports with a series of flight strips. This was done because of the urgent need for additional facilities that could be constructed in a minimum of time.

Schnepfe attributes the major success of the flight strip program to date to the vision of Lieut. Col. Stedman Shumway Hanks, now head of the Flight Strip Unit of the AAF, who first advocated flight strips in 1928 and carried on a campaign of education which finally took him in 1936 before the Senate committee on Safety in Air of the Commerce Committee of the U. S. Senate.

Following passage of the Defense Highway Act of 1941, a separate division was set up by the commissioner of public roads for handling all phases of the flight strips program. This division, known as the Flight Strips division, is responsible for location, design and construction and maintains liaison with the Headquarters, Army Air Forces in Washington. With exception of the small group comprising this division in Washington, no personnel is employed in addition to the regular field personnel of the district engineers in the Public Roads Administration.

Bargain Counter: Shown here is a completed landing strip alongside an arterial highway "somewhere in the United States." This paved runway is 4,000 feet long and at each end is 1,000 feet of stabilized surface, such as gravel, and 1,000 feet of graded surface. Practically all strips have a 40-to-1 glide angle.

Plane Firms Pay Millions Back To Navy Dept.

The total saving for the Navy Dept. through renegotiation of contracts in process now is $934,000,000, Under Secretary James Forrestal reported to the Senate Appropriations Committee, many millons of which represent revisions on aircraft prices.

"Of that, $253,000,000 will be in the form of refunds, or cash paid back to the government; $531,000,000 will represent reduction in price on goods and munitions already ordered; and $150,000,000 will be voluntary reductions — decreases in prices and voluntary reductions in profit by the contractor," he specified.

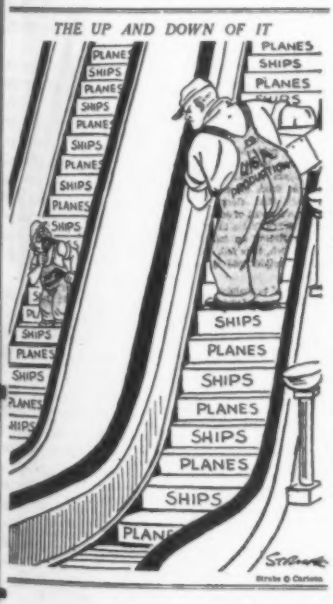
Particularly in the aircraft field where volumes of business have made tremendous leaps and unit costs have consequently dropped, have price reductions on contracts been prevalent, Forrestal said.

He told the committee of one aircraft company which went from 6 millions of total business, in 1939, to total deliveries to the Army and Navy in 1942 of around 400 millions.

"Oviously, that increase in volume created a tremendous increase in profits which taxes would not catch," Forrestal explained. "That company had an original investment of 8 million dollars; and before the renegotiation of their contracts their profits after taxes would have been around $27,000,000."

Spaatz Nominated

President Roosevelt recently sent to the Senate nomination for promotion of Maj. Gen. Carl Spaatz, Boyertown, Pa., Commander of Air Forces in Northwest Africa and formerly commander of U. S. AAF in the European Theater of Operations, to the rank of Lieutenant General (temporary), Army of the United States, according to the War Dept.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Damon Warns 'Bureaucrats' Against Stifling Aviation's Unlimited Future

FLAYING Washington bureaucrats whom he said were responsible both for the lack of a national air policy and for stunting the growth of commercial aviation, Ralph S. Damon, president of Republic Aviation Corp. on Mar. 16 predicted that aviation—if it is not stifled politically—has a practically unlimited future.

In one of the frankest speeches given to date by an aircraft executive, Damon told the Sales Executives Club in New York that "through the airways of the future the understanding of America will be so broadened that it cannot help but temper the world. All this is possible practically—let us not allow bureaucrats to stop its consummation."

There will be, Damon said, important basic changes in the living habits of this country produced by the development of the airplane in the course of World War II.

"The automobile and the good roads program which made it possible drastically revolutionized small town life," he asserted. "After this war, the airplane is going to change big city life just as drastically and do something far more important—it will change small world life. What the *good roads did for the automobile, the new military air fields will start to do for the airplane.* We now have 25 times as many good airports as we had before the war. Many of them are in remote places but after this war those places won't be remote any more.

Planning Vital

"Not as an apology but as an explanation I point out to those who have wondered why so much post-war talk before peace has come again, consideration of post-war problems and conditions is vitally necessary for the aviation industry at this time if we are going to prevent a repetition of the situation which existed from the close of the last war to 1939.

"If I may make you unhappy for a few seconds I would remind you that there were too few men then in the high seats of our government capable of comprehending the potentialities of aviation. For a full appreciation of those potentialities it requires some faint semblance of imagination and unfortunately imagination has never been one of the prime requisities of a politician.

"Today, while aviation enjoys the blessing of being the fairhaired child of all the war industries, we in aviation are determined that there shall never again be a recurrence of the conditions which existed prior to 1939. We are not crying in our beer but are simply positive that if America is to have protection of air power, our aviation industry must never again be viewed with simply mild detachment.

"It is shocking to recall but it is a fact that for eight years prior to 1941 we did not have even Assistant Secretaries of War and Navy for Air. It sounds fantastic but it is true, as many of the men at this table can tell you, that early in 1939 some of the leading aircraft and engine companies were devoting much of their time and effort seeking new orders while they were just two steps ahead of the sheriff.

"In retrospect it is all very ironical. Here was the country which gave the world the airplane, here were the world's greatest aeronautical engineers and production men, yet as a nation there was not the faintest trace of a national air program. For years it was possible to count on your fingers the men in Washington who had some conception of the military and commercial power of the airplane. That was the picture of the manufacturing side of aviation in 1939. It wasn't at all bright.

'Sorry Picture'

"The picture of the other phase of aviation—transport—was better but not good. While we had the world's best equipment, transport development in this country presented a paradoxical and sorry picture. Our various airlines, headed by capable executives and backed by good staffs, were being hamstrung by unimaginative men in Washington—men who refused to concede that a strong forward policy for aviation was necessary.

"In 1938 the Civil Aeronautics Act was passed by the Congress establishing the Civil Aeronautics Authority as an independent agency, and as such it appeared to be making excellent progress until, by executive order, this agency was again subjugated to the same cabinet office from which it had been emancipated by the act of Congress. Since this subjugation the Civil Aeronautics Board appears to have forgotten that by the act of Congress it was created to 'foster and develop,' and has confined itself almost exclusively to the regulatory type of hamstringing regulations, which older and more respected agencies would hesitate to undertake.

"It would appear that the Board, composed of gentlemen who, while personally estimable, are endeavoring to prove that a committee is a group of men who individually can do nothing but as a committee can decide that nothing can be done.

'Stupid Orders'

"Such stupid orders have been issued as ones recapturing essentially all the profits since the beginning of organization up to the given date of individual airlines, and while it is true that public indignation was so great that these orders have been modified so far as these particular recaptures are concerned, the Board has never conceded its error in stating its principle in the first place. Another order issued as recently as this current month requires a certain airline to cut its promotion expenditures by 64%. In other words, the Board, instead of remembering the words of the Act which created it to 'foster and develop,' is endeavoring to become the mother-in-law to determine how many handkerchiefs you put in your pocket every morning.

"Perhaps an explanation of such rulings lies in the typical fact that the most recent presidential appointment to this Board is a lame duck Senator who, it is reliably reported, never has been in an airplane, never has flown up to the present time. When such a man becomes a member of the regulatory body which can and has issued orders recapturing profits and delves into details of expense we appear to be having today the same difficulties as Shakespeare's time, to which he so ably referred to as 'insolence of office.'

"Because the cries of the aviation industry which have gone into the wilderness of Washington had not been answered, our airlines had, at the time we entered the war, approximately only 350 transport planes.

"So it is for those reasons and many others that we in aviation are determined that constructive plans for our industry's place in the post-war world must be discussed now as well as later when the world leaders prepare a peace treaty. Never again will American aviation strive to prosper on a confused air policy, since I believe that now certain elements of the administration and the Army and Navy, are fully aware of the shortsightedness which was so rampant less than three years ago. . . . Certain basic plans must be made now by any aircraft company intending to survive the change-over from a war to peace-time operation. Unless this is done now, the time lag necessary for development and operation would be practically disastrous when viewed competition-wise. It takes full two years and frequently more in the development of important type aircraft. This means that should our industry refrain from making any advance plans until the last enemy plane has been shot down you and your friends who ordinarily use the airlines would of necessity in 1945 be flying in 1939 equipment. Do you believe that immediately following the war any other industry is going before the public with antiquated products? Neither do I.

"One of the most encouraging signs for the development of aviation in the post-war world is the indication that our own State Department is now developing an air policy program which is to be discussed at the United Nations meeting on post-war problems which may be presumed to be going on at this very moment.

Questions Committee

"However, there is one aspect of such planning by the State Department and the United States Committee on International Aviation Policy which is not healthy. I refer specifically to the composition of the committee. I cannot quarrel with the brilliance of thought contained in the membership which is certainly distinguished, but I do protest against the failure to include on this committee representatives of the manufacturing and transport groups of aviation. In other words, there is a tendency for government, through a committee composed of representatives of the various governmental departments to create and possibly establish a policy and at the same time commit the aviation industry to it without first seeking advice and counsel. If the aviation industry is to fly passengers and cargo to and from foreign countries under such agreements, it is only just that the industry's guidance be sought now when these agreements are being developed for presentation . . .

"I am fully convinced that aviation with relation to the transportation of passengers and cargo and as a means of opening hitherto potential but inaccessible markets is to enjoy at long last an extended prosperity. The work has been made just so much easier by the Herculean job done in this war by the Air Transport Command, who should be given highest praise for

(Turn to page 28)

Official U. S. Navy Photo.

Seaplane Glider: The XLRQ-1, the U. S. Navy's seaplane glider, is shown above after successfully completing its initial tests at the Naval Aircraft Factory in Philadelphia. Standing in the cockpit is Commander Ralph S. Barnaby, the Navy's first glider pilot. The glider, which can carry troops or cargo, is being manufactured by the Bristol Aeronautical Co. Later models will be amphibian, the Navy says.

New Helicopter Use

Use of helicopters to protect ship convoys against submarines is the latest British idea, as revealed in the House of Commons recently by H. H. Balfour, Under Secretary for Air, and reported from London. Ability of the helicopter to take off and land vertically from a space as small as a ship's deck is felt to make it suitable for this purpose, as it could accompany convoys during the entire ocean trip.

Victory Corps Funds Delayed

An appropriation of $3,182,000 to implement the work of a high school "Victory Corps" under the U. S. Office of Education, one of the chief components of which is an Air Service Division giving preflight training to boys, was deleted from the First Deficiency Appropriation bill passed by the U. S. Senate on Mar. 12.

The Victory Corps funds were temporarily sidetracked when Minority Leader Charles L. McNary and others insisted the money was not authorized by basic law and should be considered by an appropriate legislative committee before funds are requested. Steps to correct this situation were taken immediately when Sen. Carl Hayden (D., Ariz.) introduced S. 875, a bill "to provide for preparation of high school students for wartime service."

The bill was referred to the Senate committee on Education and Labor which in turn has referred it to the Federal Security Agency, War Manpower Commission, Treasury Department and General Accounting Office for reports and recommendations. All these reports are expected to be in early in April.

Senate Appropriations Committee spokesmen revealed that some objections to the Victory Corps program have been voiced by people opposed to the Federal government "getting too deeply into the public schools." Parochial schools also have objected that all the proposed funds apparently would be earmarked for public schools.

Funds sought by the Office of Education for the Victory Corps would be apportioned to the states on a population basis to aid in developing proper curricula. Several specialists also would be added to the Office of Education staff to maintain liaison with the Army and Navy Departments and other interested government agencies in effective promotion of preflight aeronautical training among junior and senior high school youths.

If the Hayden bill giving official congressional sanction to the program is approved, a specific appropriation will be sought in a subsequent bill, the Appropriation Committee said.

In the meantime, high schools throughout the nation are continuing to offer preflight training as far as possible without supplementary funds, Office of Education reports.

Arnold Named Full General; May Go to Fighting Fronts

Further official recognition of the increasing importance of air power in modern warfare came unexpectedly Mar. 19 when President Roosevelt submitted to the Senate the nomination of Lt. Gen. Henry H. Arnold, commanding general of the Army Air Forces, for promotion to the four-star grade of full general, and the Senate unanimously approved the nomination.

Thus Arnold becomes the first airman to hold the highest rank the U. S. Army offers. He will sit in the councils of the combined chiefs of staff and the joint chiefs of staff with rank equal to any other officer. Gen. George Marshall as Chief of Staff, however, remains commanding officer of the Army.

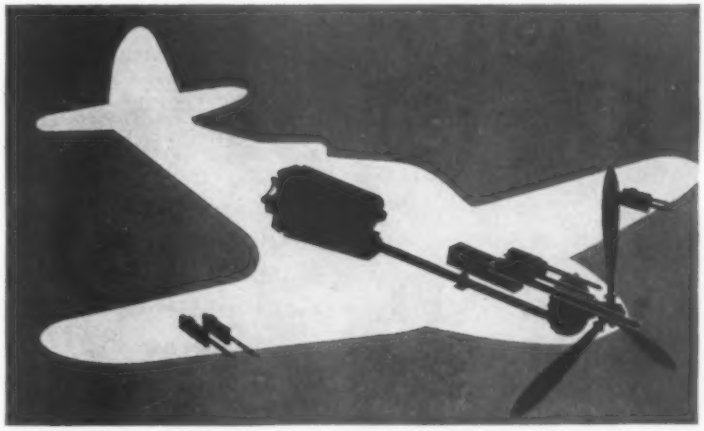
The promotion of the AAF commander is the closest the U. S. has come to having a separate air force as do other allied nations and the Axis. By the end of 1943 the AAF will number 2,450,000 men and 900 bombing and fighting squadrons, an air strength equal to all the air forces of the Axis nations, testimony of military officers at Congressional hearings has brought out.

Aviation circles in Washington state that the promotion may mean that Gen. Arnold will be made air commander in all the theaters and that another chief will be put in over domestic, transportation and material air activities. At present Arnold has charge of combat as well as supply units of the Army. His new rank may mean he will spend most of his time in the theaters of operation, directly supervising our air fight against the enemy.

The importance of Arnold's position and the necessity for his promotion have been apparent for some time. As a lieutenant general he was commanding officer of a number of other generals of equal rank. In recent months several air force commanders in various theaters were raised to the three star rank and in Army organization the commanding officer should be of superior rank to his subordinates.

The promotion came less than two weeks after Arnold was awarded the Air Medal, whose accompanying citation said:

"Henry H. Arnold, Lieutenant General, United States Army. For meritorious achievement while participating in aerial flights in furtherance of the development and expansion of the Army Air Forces. As Commanding General, Army Air Forces, General Arnold has engaged in continuous aerial missions for the purpose of supervising and inspecting the functioning of American aviation installation in all combat theaters. He has established, maintained and put into practice with notable success the principle of both supervision and inspection of Air Force installations throughout the world, thereby demonstrating leadership through intimate personal contact with the personnel of the Army Air Forces. The high efficiency and superb morale of the Army Air Forces components at home and abroad are substantially the result of his active personal leadership and outstanding devotion to duty."



'Cobra Firepower: Shown here for the first time, with War Dept. permission, is the firepower of the Bell P-39 Airacobra, in action in Russia, Africa and the Southwest Pacific. Four .30 calibre guns, toed in to concentrate on a target point 250 yds. ahead, are in the wings. In the nose and synchronized to fire through the propeller are two .50 calibre guns, while extending through the hollow propeller hub is a .37 mm cannon, said to be the heaviest carried by any single-engined fighter in the world. The guns and cannon are fired from a trigger button on the control stick and all or any combination can be used by means of a selector switch. "Provision is made for the addition of more and heavier calibre guns in the wings should the necessity arise," Bell states.

Worth the Cost

It cost $5,093,710 for the Allies to beat the Japs in the Bismarck Sea, Australia's Prime Minister John Curtin has estimated in press report from Canberra. To maintain planes and repair damage cost $4,447,710, bombs and ammunition cost $113,050, gasoline, $397,290 and oil, $135,660. The Japanese lost the equivalent of $32,300,000 in ships and equipment, the Prime Minister calculated.

President Signs Bill Appropriating Aviation Funds

National Advisory Committee for Aeronautics is allocated a total of $5,494,000 including $141,000 for construction work at Langley Field, $2,103,000 for construction at Cleveland, and $3,250,000 for general expenses in the first deficiency appropriation bill, 1943, recently signed by the President.

Other appropriations which will be made under the bill are:

Commerce Dept., Weather Bureau, $338,700 for aviation weather facilities, including $42,000 for four additional radiosonde stations in the U. S. and pilot-balloon observations at one station, $44,235 for daytime ceiling detectors and records and automatic ceiling alarms at 15 air terminals, and $252,465 to establish continuous 24 hour weather watch at points needed in war air traffic.

Labor Dept., Bureau of Labor Statistics, $12,300 for tabulation and analysis of reports on labor and plant utilization in the aircraft industry for Wright Field.

Post Office Dept., $33,797 for domestic air mail service (1940) and $343,299 for domestic air mail service (1942).

Federal Security Agency, $10,000,000 for training defense workers.

Commerce Dept., Coast and Geodetic Survey, $65,000 for aeronautical charts.

School Operators Cited

Prosecutor William E. Dowling, Detroit, has placed charges against operators of United Aircraft Training, Inc., alleged "training school" for war plant jobs. William S. Collier, W. Russell Young and William W. Bailey were cited in warrants which charged them with operating an employment agency without a license and also for operating an educational institution in conjunction with an employment agency without a permit. Dowling said 1,300 students had enrolled for courses in the school.

Mustang Armament

Armament of the P-51 Mustang fighter consists of four .50 caliber and four .30 caliber machine guns, North American Aviation, Inc., Inglewood, Cal., the plane's maker, has disclosed. These ships are now used by both the RAF and U. S. AAF.

British Government Takes Short's Plant

The British government has taken over full control of Short Brothers, Ltd., makers of four engined Stirling bombers, the Sunderland and other flying boats. This was described as the first such action in the case of a British aircraft company.

Sir Frederick Heaton, active in transport circles, has been named chairman of the board of directors, and all shares have been transferred to a nominee of the Ministry of Aircraft Production. No reason was stated for this action.

Planner Ezekiel Makes WPB Exit

Lt. Col. Ephraim F. Jeffe, formerly vice president of Consolidated Edison Electric Corp., New York, and for the past year on active duty with the U. S. Army Signal Corps, has been appointed Executive Assistant to WPB Executive Vice Chairman Charles E. Wilson, succeeding Mordecai Ezekiel, statistican and author of "Jobs for Everyone." Ezekiel is returning to the Agriculture Department.

Ezekiel's appointment, one of the first after Charles Wilson went to WPB, made industry uneasy because he is well known as a theorist and not as an experienced business or production man.

Press reports indicated that he was one of the "big names" responsible for the removal of Eberstadt, but this latest move would indicate that production men in WPB did not trust his judgment. It is said that Vice Chairman Ralph J. Cordiner asked for his dismissal.

Jeffe is considered a White House favorite and has been dubbed "hatchet man for Harry Hopkins." He did several bureau clean-up jobs for the government before going on active duty with the Army.

Blimps Spread Out

Completion of a 3,000 mile flight to an "outlying base" by a Navy blimp of the type used for anti-submarine patrols has been reported and censorship also permits the press to reveal presence of blimps in Alaska.

At NAA Breakfast: Attending the first of a series of Washington aviation breakfasts sponsored by the National Aeronautics Association were, left to right, Rep. Karl Stefan (R., Neb.); Rear Admiral John McCain, chief of the Navy's Bureau of Aeronautics, and Maj. Gen. George Stratemeyer, chief of the Air Staff.

WPB Concedes Plane Output Drops From December Level

WPB Chairman Donald Nelson's eighth report on war production, released Mar. 21, announced that number of aircarft produced in February was 9% over January, but "slightly lower" than in December, although value was up about 4%.

It was generally admitted in WPB circles that Nelson combined the January and February munitions reports, contrary to his previous custom of releasing monthly statements, because January output was considerably below December and it was considered wise to wait until the higher February indices were available to lift the average.

It was also conceded in WPB and Army and Navy circles that the U. S. aircraft industry, with exception of several plants which have been problems for months, is doing a tremendous production job despite interruptions in material flow, absenteeism, and other obstacles inherent in the war effort. Crux of most problems is in Washington administration, it was freely admitted, and the changeover to the Controlled Materials Plan is entering a crucial period.

Although Nelson has not announced the actual number of aircraft produced, Under Secretary of War Patterson stated that in January U. S. factories produced 5,000 planes while in February they reached a level of 5,500. This would indicate an increase except that in December, 1942, President Roosevelt announced production of aircraft for that month at 5,500. Thus February merely equaled December output, although it advanced over January.

Patterson told the Senate Military Affairs Committee that February production, "good as it was," was not up to schedule. "We should have produced at least 500 more planes, and our schedule calls for double our February production per month by the close of the year."

Early in the year WPB Executive Vice Chairman Charles E. Wilson, in a joint press conference with Nelson, told *American Aviation* that the production schedule for the year was such that production for December 1943 was charted in a straight line, with doubled output of December 1942, which would indicate that by December 1943 schedules called for about 11,000 aircraft of all types.

"February aircraft production was 10% higher than January output," the report says. "This included production of aircraft armament, gliders, lighter-than-air craft, spare engines, propellers, aircraft ordnance, air base equipment, and spare parts. Production in January was 2% lower than in December.

"Actual number of airplanes produced in February was 9% higher than in January, although slightly lower than in December, according to preliminary data. Calculated on a value basis, however, February airplane production was about 4% higher than in December. The principal reason was increased output of four-engined bombers, production of which in February was 36% greater than in January and 20% greater than in December. Production of medium bombers also was up substantially in February from January and was higher than in December. February output of fighters was up considerably in the month but not as high as the December mark.

"Aircraft production today is facing a period of tremendous expansion as new factories come into operation. Equipping these with adequate supplies of machine tools is going to be difficult. It will be necessary to 'screen' all requests for new facilities directing new tools to critical programs only. It will be necessary to transfer machine tools that are not being used efficiently to aircraft factories where they are most needed. It will be necessary also to step up sharply the production of critical component parts.

"To accomplish these results will require the cooperation of all engaged directly in aircraft production and others outside of the industry who will be called upon to make sacrifices in order that the aircraft program may be realized."

A box score of aircraft production in the three months considered would show: February compared with January up 10%; February compared with December—down 1%; January compared with December—down 8%.

"In January, the Production Executive Committee made up of WPB, Army, and Navy representatives took steps to stimulate production of common critical components which have been bottleneck items in the output of planes, tanks, guns, ships, and other munitions. Cooperation of the War and Navy Departments and other claimant agencies is showing increasing results in solving many of the difficulties of war production," the report says.

Jacqueline Cochran Heads Women's School

Jacqueline Cochran will be in charge of the newly opened Women's Pilot Training School at Sweetwater, Texas, and also of the original school operating in Houston, according to the AAF Flying Training Command.

Training course at both schools will require 22 and one half weeks, announcement explains. Although current standards for participation in the program are "in the process of revision," women students will take courses in mathematics, physics, code, weather, navigation and military courtesy. While in training, students will be placed on civil service status and will receive $165 per month. After graduation they will be assigned to noncombatant capacities within the continental United States.

U. S. Officials Laud Aviation Subcontracti

Army and Navy prime aircr contractors are doing an encour ing job of "spreading the wo among smaller concerns, accordi to statements on Capitol Hill Chairman Wright Patman Tex.) of the House Small Busin Committee and Lt. Comdr. John Kennedy, chief of the Small V Plants Section of the Navy.

The major campaign to increa subcontracting under Army A Forces contracts now in progress meeting with considerable succe but will have to be carried mu further and prime contracting wi small concerns will have to be i creased, Patman indicated.

"While recognizing that airplan airplane engines, propellers, a gasoline—the items for which t larger proportion of Air Forc money is spent—may not be manu factured by small plants generall I believe that the volume of prim contracts placed by the AAF wi small concerns can be enlarge he said.

Patman remarked that "the 3.8 of the total dollar volume placed b the AAF with small concerns February on prime contracts do represent an increase from 2.6% January. However, it can be agree that the larger benefits of AAF co tracting for small concerns mu accrue from subcontracting," h added.

According to Patman's figure the AAF awarded contracts durin February, as follows:

Firms employing less than 1 received a total of 230 contracts with a total dollar value of $7,964,000; firms employing between 100 and 500 were awarded a total of 184 contracts with a total dollar value of $12,283,000; and firms employing over 500 were given a total of 550 contracts with a tota dollar value of $518,920,000.

At a Senate Appropriations Committee hearing, Lt. Comdr. Kenneth used Consolidated Vultee Aircraft Corp. as an example of a naval contractor that has gone a long way in "spreading the work" and commented that "the case of Consolidated is similarly duplicated by Martin, Curtiss-Wright, and all o the other major aircraft builders."

He said that subcontracting in some aviation cases runs up to as high as 90% to 92% of the dollar

Kennedy told Senators: "The (then) Consolidated Aircraft Corp. had on Aug. 14, 1942, 1677 different vendors and subcontractors, and among these were the Parker Appliance Co., which, in turn, had subcontracted to 307 vendors and su subcontractors.

"As of the first of February of this year, the (then) Consolidated Aircraft Corp. had 2700 subcontractors. That is a gain of approximately 1000 . . . This illustration shows that naval aircraft contracts distribution goes down into thousands of plants and benefits millions of workers."

Brawn and Control make the Power TO KAYO TOKYO!

The high qualities of precision, strength and dependability are probably a humdrum prelude to the more deadly "last act and curtains" in the drama of whipping the Axis all over the world.

But . . . rugged prefabricated structures and control elements that go into the finest planes in the world are *necessarily* routine! Routine perfection*ism* is now the only "ism" that really counts.

Machine guns must wheel freely . . . and they must not jam. Landing gear parts must function perfectly so that planes will fight and fight again. Rudders, elevators, flaps and ailerons must have positive and feather-like control for attack and evasion, for take-off and landing. All aircraft parts must be right . . . there can be no second best!

The workers, the designers and engineers, and the management . . . *all* the men and women of GENERAL AVIATION . . . have only one aim: TO KAYO not only TOKYO, but TO KAYO all the enemies of our freedom!

GENERAL AVIATION EQUIPMENT COMPANY, INC.

ASHLEY and WILKES-BARRE, PENNSYLVANIA, U. S. A.

Aircraft Structural and Control Parts

MAP CASES · GUN CHARGING HANDLE · GUN MOUNTS · LANDING GEAR PARTS · METALLIC CARTRIDGE LINKS · CONTROL PULLEYS

INDUSTRY

finds its place in the sun

There's a new invasion of the Southland taking place . . . and a welcome one. Industry has seen the light of new advantages and moved with steady flow to this great sector of America—one incredibly blessed in climate . . . rich in vast and varied natural resources.

The New South is not only today a major source of raw materials — but of finished manufactured products as well. Industry has indeed settled itself comfortably in the sun . . . and likes it.

Delta, flying the southern sweep for 18 years, has ably served her business leaders. Delta will continue to be a vital link between the industrial centers of the New South.

DELTA *Air Lines*

Ice Spotters

Early movement of ore on Lake Erie and the Detroit River is being expedited by CAP's Michigan Wing, OCD reports. Lt. Tom Linton, CAP, with Richard Pellows of Squadron 632-2, recently flew with a press photographer, took pictures of the first fissures in the ice on the lake. Last spring CAP pilots took up steamship captains to aid them in charting their courses through the broken ice.

WPA Liquidation Won't Affect Airport Work

Liquidation of the Work Projects Administration this month will not seriously affect any important units of airport construction or improvement which were under way when the dissolution order came, according to WPA officials.

Wherever there are major projects in which the Civil Aeronautics Administration or the Army or Navy are interested, arrangements have been made for the CAA to take them over and complete them.

WPA officials explained that on lesser projects, not fitting immediately into military needs, every effort was made to complete any useful unit on which work was under way when WPA was ordered dissolved.

Projects in which the CAA or the military branches are not interested will be completed in many cases by the sponsors or local communities, WPA said. Large scale improvements involving critical materials and manpower must be approved by the Army or Navy to be completed during the war.

Reviewing its activities in this field, WPA said it had: constructed, enlarged or improved more than 800 airports; built 700 miles of new runways and improved almost 200 miles of existing runways; built 1,139 airport buildings and made improvements to about 3,000 airport buildings.

Nearly 644,000 miles of roads were built, including many giving access to airports. Projects were completed at more than 1,000 sites. Tabulations indicated that landing field areas totaling 47,050 acres have been established, fields embracing 78,439 acres have been reconstructed or improved, and 8,468 acres have been added to existing airports.

A total of 13,809 new airway markers was installed and 3,772 were reconstructed. Eighty-four new beacons were installed and 18 were improved.

WPA also claimed a quick job of blacking out old airway markers and airport signs in coastal areas following the outbreak of war.

Useful units such as runways, grading jobs or drainage projects were included in the list for rush completion after WPA dissolution orders were issued.

Big Program to Train Women Flyers Called Unlikely Now

Discounting widespread newspaper publicity, what are the current activities and future prospects involving women flyers in the war effort? A survey of Washington authorities reveals a demand for women in military aviation but no action on plans for a practical large-scale program.

Army officers claim they are eager to use women in ferrying flights but still demand experience far beyond that of the average flyer.

Although CAA's War Training Service contract schools are hiring all available women instructors, CAA officials will not admit the necessity now for training more.

The WTS staff, its hands full with Army and Navy reservists, dream of training women in some rosy but remote future, and hearings have been held on Capitol Hill, but present indications are that Congress will not recommend appropriations for training women this session.

Another element, of course, is the present surplus of pilots in both the Army and Navy. This situation will change during the summer and fall, however, toward an actual shortage, and some observers think a shortage must be imminent before women training idea can get much farther.

While R. McLean Stewart, of WTS, claims "There is a very real need for women in the military aviation program, both as instructors and in service jobs," C. I. Stanton, Administrator of CAA, says "only if there is a national program of cadet flying training for 17-year-olds in the high schools will there have to be training of women instructors. These are two phases of one subject, and public agreement on the value of both to the war effort will be necessary."

Over 3,000 instructors will be needed for this training of the Victory Corps. This future demand plus the possibility of shortages of combat pilots has aroused discussion of replacing men in ferrying and instruction work with women pilots. Over 2,500 American women have at least 50 hours flying experience, are anxious to do more flying, and could be trained for non-combat operations. Of this 2,500, only a small portion is at present able to get training.

The Women's Auxiliary Ferrying Command (WAFS), under AAF's Air Transport Command, will accept only those already trained with a minimum of 500 hours. A few hundred girls with more than 200 hours are being trained by Jacqueline Cochran's Women's Pilot Training Service under the Army's Flying Training Command, though, like the WAFS, they retain civil service status. At Sweetwater and Houston, Tex., they are taking a four months' course in cross-country and navigation preparatory to filling vacancies in ferrying work.

Since CPT became War Training Service and closed its ranks to women, over 2,000 women with operator's licenses have at present no alternative but to storm the few remaining private schools. No operator can get replacement parts, or priorities on rubber, or gasoline for planes not used exclusively for military purposes. With private planes at such a premium, instruction and renting charges have skyrocketed beyond reach of all but a few. This untapped source of women pilots has stimulated plans for working them into the military aviation program.

The Army's desire to centralize its cadet training program has raised still another aviation problem. CAA is soon to be faced with the prospect of over 150 unused training fields and along with them trainer planes and instructors now working under WTS. If CAA should adopt a program of teaching women to fly, these fields would make possible an economically sound program, some officials hold.

A model layout and training schedule for women student instructors has already been developed by the Tennessee Bureau of Aeronautics, which set up an experimental school under the direction of Mrs. Phoebe Omlie. On Feb. 7, the school turned out 10 graduates now giving primary instruction at CAA contract schools.

As a result of this experiment there exists a workable plan which could be adopted by those who assume responsibility for training women. W. Percy McDonald, chairman of the Tennessee Bureau, has presented a Congressional Appropriations sub-committee headed by L. C. Rabaut with an outline including daily schedule, program of studies, and budget of $2,500,000 for training 2,000 girls in a year. If this proposal were adopted, three twelve-week classes would be started, one class of 400 students using 95hp planes in secondary instruction, one class of 400 in cross country, one class of 100 in instructor training. This should provide about 500 instructors at the end of 1943 with a backlog of 400 students ready to enter the instructor course."

Indication of the interest in such a course among eligible women lies in the file of over 1,100 unsolicited applications Mrs. Omlie has received. Proof of their desirability as instructors exists in WTS's elementary schools for Army and Navy enlisted reservists where 73 women are instructing, including the 10 trained by the Tennessee project.

"The Army has shown it wants to use women," contended Mr. Stewart, contradicting other capital officials who said the AAF is dead set against them. "From now on instructors will be moved into combat service regularly and will have to be replaced at the bottom. But flight contractors under WTS have a big job to do in the aviation-cadet program. We would like to see it going successfully before attempting another. Then if planes are available it would be very wise for us to train women."

Army Air Forces Photo.

African Transport: An Air Forces transport plane has just rushed these emergency rations to the fighting front in the Western Desert. Note the smashed Axis plane in the background.

104 to 66

A group of Consolidated B-24 Liberators, commanded by Col. George F. McGuire, has helped the Ninth United States Air Force accumulate an advantage of 104 enemy planes destroyed and another 200 probables against sixty-six American losses of all types during the seven months ending Feb. 18, according to War Dept. Col. McGuire, who commanded raids on Tripoli, Sousse, Sfax, Gabes, Bengasi, Naples, Messina, Crete, Tobruk, Tunis and harbors in Greece, commented favorably on the Liberator's "long range . . . heavy bomb load," and performance at high altitudes.

Lahm Slams Air Leaders

In effect calling our military and naval leaders short-sighted, Maj. Gen. Frank P. Lahm, U. S. A., Ret., told the Overseas Press Club of America recently in New York that "The one thing lacking today when we talk of airpower is vision."

"We haven't had it in the past, and we havent got it now." The late Brig. Gen. William Mitchell, however, did have it, Lahm said.

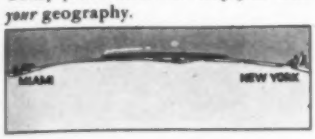
This advertisement is one of a series which will appear in national magazines and newspapers this year as Consolidated's contribution toward a clearer public understanding of "aviation geography."

CONSOLIDATED

YOUR CHILD CAN SHOW YOU A NEW WORLD

MANY a time, when the going got tough, you've probably given your child a helping hand with his homework in geography.

But now the picture is reversed. Today your child can help *you* with *your* geography.



Today it takes *less time to travel from New York to Moscow by plane than from New York to Miami by train.*

His modern geography book is unfolding to him a world that didn't exist when you went to school. A world, for example, in which planes are spanning the Atlantic in a matter of 400 minutes—and a man can travel from New York to Moscow by plane in less time than he can go from New York to Miami by train—and the route from New York to Bombay is not a 3-week voyage past Gibraltar and Suez, but a 40-hour flight where the way stations are Iceland, Oslo, and Moscow.

In this new world, the "rowboat" geography you studied as a child has been supplemented by today's "aviation" geography. The earth, and all the people on it, have become a global community. And rather a small one, at that.

Barriers have been leveled off. Oceans are small bodies of water

From New York *to Chungking, China, by train and ship, is about 11,300 miles—at least a month-long voyage.*

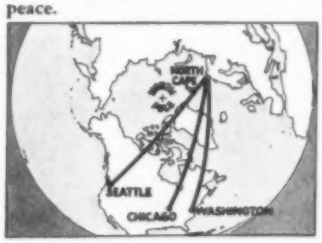
By swift *long-range plane — via Fairbanks, Alaska—Chungking lies only 7500 miles, or 38 hours, from New York.*

separating nations which must now become either friendly neighbors or close enemies. No spot on the globe is more than 60 hours distant from your local airport!

This is the world your child is being taught at school. And it is *our* world, as it really is.

We must quickly learn to understand it. For only then can we look beyond the horizons of the present toward the future and its promise.

One thing is already as clear as though written in mile-high letters in the sky. Our growing air power is today becoming a mighty weapon in our hands for Victory. Tomorrow it will be one of the implements with which freedom-loving nations can help build and enforce an enduring peace.



A German bomber *squadron based in Norway could, by flying approximately the same distance, bomb Washington, D. C., Chicago, or Seattle.*

It is this vision which today inspires the tens of thousands of American men and women whose life and job it is to build the finest aircraft in the world, faster than they have ever been built before.

• • •

Consolidated Aircraft Corporation

San Diego, California • Fort Worth, Texas
Tucson, Arizona, New Orleans, Louisiana

Member, Aircraft War Production Council

★ ★ ★ ★ ★ ★

QUICK FACTS FOR AIR-MINDED READERS

There are two American four-engine bombers flying on today's world battle fronts. One is the Flying Fortress (B-17), designed by Boeing. The other is the Liberator (B-24), designed by Consolidated.

• • •

Consolidated has been a big-plane builder for more than 15 years. The company is 20 years old. Today, in addition to the Liberator (B-24), Consolidated also builds the Catalina (PBY) Navy patrol bomber, the Coronado (PB2Y) Navy patrol bomber, and the Liberator Express (C-87), transport version of the Liberator bomber

• • •

Of the many tens of thousands of aircraft workers at the Consolidated plants in Fort Worth and San Diego, almost 40% are women.

• • •

Consolidated was the first to build long-range bombers and huge transport planes by mass-production methods, on a moving assembly line.

• • •

Liberator bombers and transport planes have broken all records for both trans-Atlantic and trans-Pacific flight. One Liberator flew to London in 400 minutes. Another flew from Australia to the U. S. in 35 hours and 53 minutes.

• • •

The globe-girdling Consolidated Liberator, dubbed "Gulliver," which carried Wendell Willkie on his 31,000-mile round-the-world flight, was the first plane in history to span Siberia and cut across the Gobi Desert and Mongolia, the first to fly from China to the U.S. via Alaska.

The Consolidated Aircraft plants at Fort Worth and San Diego cover so much space that company messengers are equipped with bicycles and motor scooters.

• • •

Through the use of wood plastics, Consolidated is now saving 200 pounds of precious aluminum in the construction of each Liberator bomber.

• • •

How fast will the planes of tomorrow fly? A new wind tunnel is now nearing completion on the West Coast which will enable aircraft manufacturers to test planes flying at speeds approaching that of sound itself—741 m.p.h.!

• • •

On Consolidated's assembly lines there will soon be gigantic planes which will literally dwarf even the huge Liberator.

AIRCRAFT ***DESIGNERS AND BUILDERS OF THE LIBERATOR, CORONADO, CATALINA, LIBERATOR EXPRESS***

Air Power Review

Highlights of the Fortnight

March 8

U. S. Tenth Air Force in India-Burma-China during February met almost no Jap air resistance while the Chennault unit in China failed to persuade a single enemy plane to enter a fight. Brig. Gen. Clayton Bissell, commanding general, says in New Delhi, India. China and India AAF planes made 490 sorties in 70 missions, with 28 Jap planes known destroyed and nearly as many more probable. Bissell denies *Time* item reporting friction among Lt. Gen. Joseph Stilwell, commander of all U. S. forces in area, Chennault, and himself . . . Air attacks have destroyed all piers and other transport equipment in the port of Genoa, Swedish sources say . . . British plane production is "going very nicely," with quality as well as quantity, Sir Stafford Cripps, Minister of Aircraft Production, says.

American-style precision bombing from high-altitude is as effective in moonlight as daytime, Col. Hugo P. Bush, chief of Ninth Air Force's Heavy Bomber Command, says in Cairo, revealing that B-24s have done practically all the long-range strategic bombing from that area on central Mediterranean points, and without fighter escorts. In nine raids since Dec. 4 B-24s have dropped 600,000 lbs. of bombs in Naples area. In 7 months through February all Ninth units, under Maj. Gen. Lewis Brereton, have shot down 104 enemy planes, with 200 probable losses or damages, against U. S. loss of 66, plus several interned in Turkey. This is far below 10% loss factor. The Ninth sank 51 ships, plus 30 probables. In 600 missions and 6000 sorties, nearly 9,000,000 lbs. of bombs were dropped, the most on Bengazi, then Tripoli and Naples.

March 9

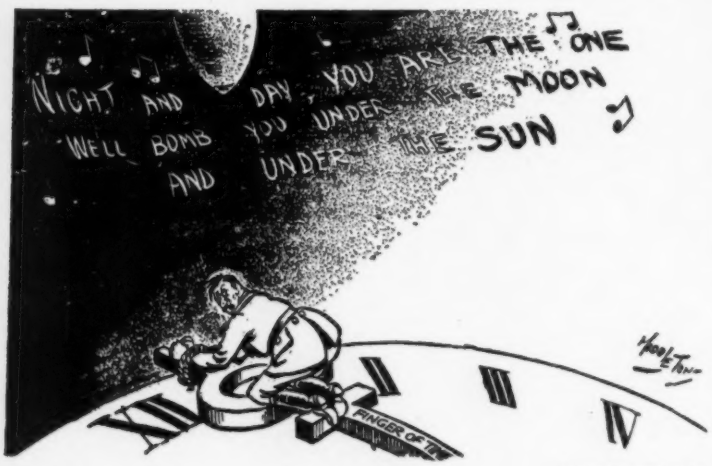
RAF smashes at Munich with 500 lb. blockbusters and incendiaries.

March 10

Rome Radio repeats warning of Berlin to America to watch out for German bombers, especially Heinkel-177, which with four engines "can carry more than a 6 ton bomb load and without difficulty reach New York, bomb the city and return to their bases."

March 11

Sir Archibald Sinclair, air minister, says British bombs have wrecked 2,000 German war plants, cut German steel production by 1,250,000 tons a year, and driven at least 1,000 persons from their homes. This does not include U. S. AAF work. Heavy aerial activity has forced Germany to keep twice as many



"Night and day." Middleton in The Northern Echo

fighters in the West as on the Russian front, and over 10% of German planes sent over Britain in three months have been shot down. Since last spring areas destroyed were: Wilhelmshaven 118 acres; Rostock 130; Mainz 135; Luebeck 200; Karlsruhe 260; Duesseldorf 380; Cologne 600; Berlin, not yet estimated; Essen 136,000 sq. yds. of shops and other Krupp works. Rate of German plane losses in three months has been almost thrice that of RAF.

Sinclair says in North Africa 767 enemy planes were downed against loss of 171 for RAF and 221 AAF losses since November. In Egypt-Libya RAF shot down or captured 1,477 Axis planes, losing 245 (probably since October). Over Malta RAF downed 917 planes in a year, losing 363. In Europe RAF lost 600 fighters, but destroyed 655 of the enemy's, the period of time not stated.

Maxim Litvinoff says in Washington a Russian all-Airacobra regiment downed 43 enemy planes at a loss of three, while another Russian group using B-25s operated 380 combat flights in January without losing a plane . . . American planes "continue to maintain a gratifying superiority over Axis aircraft" in Tunisia, says Secretary Stimson, having shot down 58 Axis planes at a cost of 31, in one week. He promises China's new Fourteenth Air Force more planes, notes "surprising" lack of Jap aerial action in China and Burma . . . Germany is building a "power glider," the ME 323, a monoplane with six low-powered French Gnome-Rhone radial engines of about 750 hp. London says . . .

March 12

Rolls Royce in Britain announces its new supercharger is being used in Spitfire 9 fighter, operating at 40,000 ft., local sources claiming U. S. equipment is not adaptable to fighter planes . . . Air Commodore Thornton, British air attache, says in Washington British plane production has almost reached its peak . . . Air bases in eastern China have been completed for months, some within 200 miles of Jap shipping lanes, and only await planes. Col. Robe Scott, leader of Chennault's fighter group, says in New York. Just 500 pla would chase the Japs out of China and hit their shipping hard . . . The Pol Air Force, operating with RAF, has destroyed 518 Axis planes, with anot 124 probable losses, and damage to 147, while the Polish Fighter Squad alone downed 186 . . . Air Chief Marshal Sir William S. Douglas, chief middle east air forces, confers with Turkish officials . . . Henry Kaiser says will be turning out six new-type aircraft carriers a month by year's end, us facilities in Washington state. Each is 478 ft. long, with 514 ft. flight de First ship will be launched Apr. 5 . . . RAF drops over 1,000 tons of bom on Essen, while AAF Fortresses blast Amiens.

March 14

Fact that Lt. Gen. George Kenney, MacArthur's commander of allied a forces in Southwest Pacific, arrived in Washington so soon after Bismarck Se battle is considered significant. MacArthur constantly is making clear to news papermen and government officials his urgent need of planes . . . Cairo source permit publication that Hurricanes, specially equipped with cannon firing armor piercing shells, have been used as tank-busters against the Axis for months.

March 15

Jap shipping, new air bases in island area of the Banda Sea, 500 miles fro Darwin, and assembly of Jap planes nearby, cause MacArthur concern . . Air Chief Marshal Sir Frederick Bowhill is named air officer commander in chi of the new Air Transport Command (Britain). He was formerly head of RA Ferry Command. In addition to controlling RAF transports in the British Isle the new Command will be responsible for organization and control of strateg air routes. . . . A terrific aerial battle will precede the ground drive of th Allies in Tunisia, and the Allies are assembling "one of the most formidabl first-line air forces in the world," says United Press, with about 15 plane type Fortresses, Mitchells, Marauders, Marylands, Bostons, Lightnings, Airacobras, Wa hawks; Wellingtons, Liberators, Baltimores, Bisley bombers, Hurricane bombe and fighters, Spitfires, night Beaufighters and Mosquitoes.

March 17

Lt. Gen. George Kenney and Maj. Gen. Richard K. Sutherland see Presiden Roosevelt to plead for more planes for MacArthur, then tell reporters Japs firs string air team is gone "while our first team is just getting in line" . . . Bette air-ground coordination is necessary in Tunisian fighting, Col. J. S. Allard, forme Curtiss-Wright official, back from North Africa, says. "American equipment ha proven equal if not superior to the Germans . . . in the air. The Nazi fighters 190s and 109s (Messerschmitts), have better all-altitude performance than an single plane of ours, but that is a condition that will be corrected. At their own best altitudes, our planes always get the best of them and our pilots are fa superior." We are knocking down the enemy at 3 to 1 in Africa, he reports . . In 45 days after Feb. 1, U. S. bombers from Britain went on 11 operations against 18 targets, while RAF Bomber Command in same period did 34 day operations plus 7,000 sorties on 38 nights, showing contrast in size of aircraft complements says New York *Herald Tribune*.

March 18

Acting Air Vice Marshal A. H. Orlebar is named Deputy Chief of Combined Operations (commandos). He was captain of Schneider trophy teams of 1929 and 1931. He succeeds Air Vice Marshal J. M. Robb, lent to Gen. Eisenhower . . . U. S. steps up raids on Kiska, with heavy and medium bombers and fighters with 18 attacks in as many days.

March 19

Claiming the newest battleships are a hundred times more effective against air attack than those built before Pearl Harbor, Rear Admiral William K. B Blandy, chief of Naval Bureau of Ordnance, makes the statement for the battle ship proponents which airmen have expected ever since the brilliant Bismarc Sea battle. Blandy appears at Secretary Knox's press conference, and implie that the Japs could not have done to us what we did to them in the recen epic. He says ship anti-aircraft fire has been improved tremendously, citing on battleship which shot down 32 Jap planes in 30 minutes and another which knocke out from a fourth to a third of about 35 attacking Japs. There was little air pr tection for either ship at the time . . . The rapid change-over from twin t four-engined bombers by the Allies over Europe, with increasing bomb-capacity is the outstanding development of the air war, in opinion of Thomas Henry *Washington Star* correspondent . . .

March 20

Britain announces largest single group of Canadian flyers yet received has ar rived in the British Isles, plus many ground soldiers . . . Russia says Germany lost 20,000 planes in the first year of the Russian war and that German airmen ar deteriorating in quality. Total of 3,000 planes were lost May 15-July 15, and 4,00 in a recent three months period . . . Gen. MacArthur, in reply to congratulations of RAF officials, says "The infinite possibilities and strategic application of air power have not yet been fully understood or comprehended. In proper coordination, it opens up horizons not yet explored. Therein lies victory if we have suffi cient imagination to seize the opportunity."

"The great mass of our American air force which will be employed this year will be the Fortresses, not Liberators; new bombers and better bombers are coming on . . . They will carry bigger cargoes and be better armed and equipped to de fend themselves." Maj. Gen. Ira Eaker, chief of the Eighth Air Force, says in London, repeating that "in the very near future" AAF forces will "nearly ap proach" those of the RAF. Our bombers will "beat off the best enemy fighter opposition without excessive or uneconomical loss." He reveals some AAF crews are being trained for night bombing, and that some U. S. planes are being equipped for night flying.

March 21

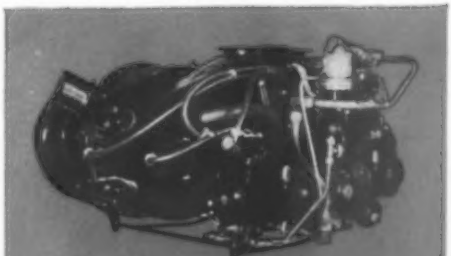
A thousand planes based in China could demolish Japanese industry, Gen. Mo Pon-tzu, high ranking Chinese airman, says in Washington. He estimates the Japs have lost 2,000 planes so far, and a large percentage of their best pilots . . .

R. H. W.

XUM

Down — but not out of action — is this long-range patrol bomber of the U. S. Navy. These aircraft, equipped with Lawrance Auxiliary Power Plants, possess a dependable source of electric power to operate radio, lights, and heating equipment even when main engines are dead — power to call for help and to keep the crew warm and comfortable until it arrives.

Lawrance Auxiliaries today serve America on the sea and in the air, providing power for accessory equipment of all kinds, from galley hot plate to main engine starters. The efficient and reliable performance of lightweight and compact Lawrance Auxiliary Power Plants is playing an important part in America's combat operations on world-wide battle fronts.



Lawrance Auxiliary Power Plant, Model 30Γ

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LAWRANCE ENGINEERING AND RESEARCH CORPORATION • LINDEN, NEW JERSEY

When plane windows need impact strength

Aero-Quality **LUMARITH**

When twelve pounds of wild bird hits makes a suicide dive at 60 miles an hour, the plane's transparent plastic windows have to be able to take it.

High impact strength is an outstanding characteristic of Aero-Quality Lumarith which adds to the military stamina of many United Nations' planes.

Among the many other features of Aero-Quality Lumarith, its protection for the airmen against severe sunburn is of particular interest.

Aero-Quality Lumarith is transparent to visible rays which produce brilliant sunburn. Other Lumarith formulas transmit up to 80% of the health-giving ultra-violet rays. This feature is just one indication of the versatility of this outstanding plastic.

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The First Name in Plastics

CELANESE CELLULOID CORPORATION

LEFT—The repetitive flash photograph by Gjon Mili shows 1/8" sheet of Aero-Quality Lumarith taking full force of free-falling 12-lb. ball—with flashes of resulting rebound. 1/4" stock withstands drop of 36 ft.

A DIVISION OF CELANESE CORPORATION OF AMERICA

Newest Directive Adds to Wilson's Industry Powers

Increased power for industry's Charles E. Wilson was granted by WPB Chairman Donald Nelson to his executive vice chairman in an order signed Mar. 20 establishing the new functions and offices of Wilson following Vice Chairman Ferdinand Eberstadt's dismissal.

It is significant that the most important divisions, having to do with the five "must" programs set up by President Roosevelt, report directly to Wilson as Executive Vice Chairman. None of his original powers has been retracted by the newest order.

Several top jobs which were to have been filled by crack executives, such as the Director General of War Production Scheduling, have been abolished. The position vacated recently by Curtis Calder, Director General for Operations, which formerly issued all WPB orders, is also abolished.

Sections 6 and 7 of the new order are the most interesting from an aviation standpoint since they deal with Wilson's functions as Executive Vice Chairman and Chairman of the Aircraft Production Board and with the abolition and transfer of various organization units and positions.

These sections follow:

Section 6. Organization and Officers Reporting to the Chairman and the Executive Vice Chairman:

.01 The following organization units shall report and be directly responsible to the Chairman: (1) Office of the Executive Secretary; (2) Office of the General Counsel (Legal Division); (4) Office of War Utilities; (5) Smaller War Plants Corp.; (6) Smaller War Plants Division.

.02 The following organization units and officers shall report and be directly responsible to the Executive Vice Chairman: (1) Administrative Assistant to the Chairman; (2) Aircraft Production Board and its Aircraft Resources Control Office; (3) Aluminum and Magnesium Division; (4) Controller of Shipbuilding; (5) Copper Division; (6) Information Division; (7) Office of Civilian Supply; (8) Production Executive Committee; (9) Steel Division.

.03 Pursuant to War Production Board Regulation No. 1, as amended, all legal authorities with respect to priority actions are vested in the Executive Vice Chairman and are subject to redelegation by him.

Section 7. Abolition and Transfer of Existing Organization Units and Positions:

.01 The Office of the Program Vice Chairman as established by General Administrative Order 2-65 and the Office of the Production Vice Chairman as established by General Administrative Order 2-76 are hereby abolished.

.02 The Office of the Deputy Director General for Distribution and the position of Director General of War Production Scheduling are hereby abolished and their functions, records, personnel and funds transferred to the Program Vice Chairman.

.03 The Office of the Director General for Operations is hereby abolished. Its functions, records, personnel and funds relating to the supervision and direction of industry divisions and field offices are transferred to the Operations Vice Chairman; its functions, records, personnel and funds relating to distribution control and priority policy are transferred to the Program Vice Chairman.

.04 The Office of the Deputy Director General for Industry Division, the Office of the Deputy Director General for Field Operations, the Office of the Deputy Director General for Staff, the position of Director General of War Production and the Production Bureau are hereby abolished and their functions, records, personnel and funds transferred to the Operations Vice Chairman.

War Agencies Review

COMPLAINTS AGAINST CMP PROCEDURES have been filed in Washington and as a result modifications of some of the original CMP plans have been promised. Attention was centered upon this situation through a letter of complaint addressed to Executive Vice Chairman Wilson by the Automotive Council for War Production.

Four controversial issues were emphasized: (1) lack of balance between authorized schedules and materials allotted; (2) split preference ratings; (3) allotments delayed beyond practical time limits; (4) allotments received for only the second quarter when longer-range planning is essential. WPB insists that the difficulties are recognized and steps are being taken to correct them.

Because friction and confusion has delayed the necessary inventory of available critical materials, CMP will not become fully effective in the second quarter, as had been hoped, but officials believe that it will be fully operative by July 1.

Washington observers, noting the changes which have been made in the original program, consider that in its final analysis CMP will shape up as a combination of the better features of both CMP and PRP.

Manufacturers of items identified as Class A products under CMP can now apply for their allotments of aluminum, copper and steel under a simplified form. CMP-4A, formerly a four-page sheet, has been revised to a single, letter-size page.

Segregation of aircraft alloy steel orders on producers' books will permit the Aircraft Scheduling Unit to modify the problem of screening monthly production schedules.

Aluminum is to be the first of the controlled materials to be scheduled under CMP. Producers are being advised that PRP forms will not be used in the second quarter, beginning April 1. Closer control has been put on aluminum plant scrap by Order M-1-d, as amended.

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AIRCRAFT PRODUCTION BOARD organizational chart is amended to include a Chief of the Project Service Branch "to assist in expediting the construction of aircraft manufacturing plant facilities, following the approval of the project by the Facility Review Board, or the Construction Division, as the case may require."

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INVESTMENTS OF $2,657,112,000 HAVE BEEN MADE IN AIRCRAFT and aircraft accessories plants by Defense Plants Corp., Jesse Jones reports. "This exceeds by about 10 times the entire assets of all aircraft manufacturers before the war. The total square feet of airplane plant space alone—35,000,000—would cover 700 city blocks, 250 feet by 200 feet, or one solid city block 200 feet wide and 33 miles long. The largest DPC commitment for facilities now in operation is for an aircraft engine plant costing $173,357,236."

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AIRCRAFT MATERIALS CONSERVATION is being arranged through standardization for the substitution of materials in aircraft construction. This is being done through a joint committee developed cooperatively by the Army, Navy and War Production Board. Action is being taken under the direction of the Operating Committee on Aircraft Materials Conservation of the WPB Aircraft Production Board. Suggested substitute materials are assigned for trial to Army and Navy airfields. An Army observer is present when a Navy test is made and a Naval representative watches the test at an Army field.

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APPEALS FOR OCCUPATIONAL DEFERMENT may now be transferred to the area in which a registrant is employed through a change in Selective Service rulings.

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LISTS OF ACTIVITIES ESSENTIAL TO THE WAR have been revised by WMC for use of USES offices and Selective Service Boards. The 35 groups of essential activities have been indexed to show the particular industries and services included. Approximately 3000 items are indexed and divided into manufacturing and non-manufacturing activities.

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CONTROL OF STATISTICAL REPORT FORMS of Federal Agencies is announced by the Bureau of the Budget, particularly citing 10 agencies which have set up internal control units to improve the quality and coordination of their questionnaire forms. These departments are Agriculture, Commerce, Board of Economic Warfare, Federal Power Commission, Federal Security Agency, Navy, Office of Price Administration, Services of Supply, War Manpower Commission, and War Production Board.

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AVIATION MEDICAL STUDIES by the U. S. Public Health Service have been expanded greatly since Pearl Harbor, the Federal Security Agency reports. Current research includes clothing for pilots, visual functions for aviators and effects of new anti-malarial drugs on flyers. Other studies are being made upon the effects of pressure.

CONRAD CAMPBELL

School Honored

Aviation Institute of Technology, 3601 35th Avenue, Long Island City, N. Y., has been awarded the first district efficiency banner by the AAF Technical Training Command.

Tom Clark Named For Anti-Trust Post

Tom C. Clark and Hugh Cox have been nominated to assistant attorney generalships, to head the Anti-trust Division and newly-created War Division, respectively, of the Justice Dept.

Clark, who has been chief of the War Frauds Unit, will replace Thurman Arnold in the Anti-trust post. The work presently carried on by the Unit will be assimilated by the War Division under Cox.

Army Weather Cadet Program to Train 10,000 Meteorologists

A new Weather Cadet Training Program, expected to graduate more than 10,000 meteorologists by mid-1945, has been announced by the War Dept. A total of 27 universities and colleges and the AAF Technical Training Command's school in Grand Rapids, Mich., are being used.

Program is divided into three phases. "A" phase is the advanced stage, which has been continued from its beginning in 1939 when regular Army officers took a nine month course in professional meteorology. New classes in this division will be started as late as next July 1.

In the "B" phase, scheduled to start March 15 at 12 colleges, college sophomores or freshmen well qualified in mathematics and physics, selected from voluntary inductees, will take a shortened basic course, going on to the professional classes next September.

"C" phase started February 22 when high school graduates or college freshmen began classes on 12 campuses. Additional classes in this group are planned to begin May 15.

Students in basic courses continue for one year, with one week's furlough each three months. After graduation, they go to the professional meteorological colleges for eight months' further training, and receive commissions upon graduation.

So far applications have been four times prospective enrollment. All applicants are selected from the highest one tenth of Army test gradings.

Wings Club Organized; Coombe is President

Organization of the Wings Club, an airmen's club which has the full use of the Yale Club in New York City, has been completed. Membership comprises aviation executives in New York, as well as non-resident members from other cities, and many Army and Navy airmen.

President is Reginald G. Coombe, vice president of the Central Hanover Bank & Trust Co., and vice presidents are: Col. J. Carroll Cone, assistant vice president, Pan American Airways; Comdr. David S. Ingalls, U.S.N.R.; Casey Jones, president of the Casey Jones School of Aeronautics; Wing Comdr. Homer Smith, R.C.A.F.; Clayton Knight, the aviation artist, and Lt. Comdr. David H. McCulloch, U.S.N.R.

On the executive committee are Col. Cone, chairman; Harry A. Bruno, of H. A. Bruno & Associates; Arthur R. Christie of United Aircraft Corp.; Reginald G. Coombe, and Thomas A. Morgan, president of the Sperry Corporation. The Yale Club in which the Wings Club has its quarters, is at 50 Vanderbilt Avenue in the Grand Central Station area.

The skin of freedom's teeth

When free America first struck back at totalityranny, Boeing Flying Fortresses* put teeth in our aerial offensive . . . smiting the enemy with death from the substratosphere.

In the photograph above, you see the aluminum "skin" that covers the wings of the Boeing B-17. To speed the output of the thirty-two-ton Fortresses, aluminum alloy sheets were needed of greater dimension than it is practical to manufacture.

On the machine pictured above, developed by Boeing tooling engineers, standard aluminum alloy stock is automatically spot-welded into "super-sheets" up to 14 feet wide and any desired length. Many times faster than flush-riveting, the Boeing automatic feed spot-welding tables make 65 controlled welds a minute, enabling Boeing to meet the extremely high U. S. Army requirements while maintaining quantity production. And the elimination of rivets reduces "drag" and increases speed in flight.

This is merely one of more than 100,000 special tools and templates developed by Boeing for the faster production of the Flying Fortress. Like many other Boeing-developed tools, it has been widely adopted by major aircraft manufacturers throughout America.

And tooling is but one of more than *twenty-five* different fields of engineering activity at Boeing . . . fields which might seem, to the uninitiated, a far cry from Flying Fortresses, Stratoliners,* globe-girdling Clippers and other Boeing-designed and Boeing-built airplanes.

It is this diverse skill and experience in manufacturing, tooling, engineering research and design which will some day make the phrase "Built by Boeing" a hall-mark of better products for free men in a better world.

DESIGNERS OF THE FLYING FORTRESS • THE STRATOLINER • PAN AMERICAN CLIPPERS **BOEING**

*THE TERMS "FLYING FORTRESS" AND "STRATOLINER" ARE REGISTERED BOEING TRADE-MARKS

Tin fish swim only on the home stretch

Aerial torpedoes have to swim only a few hundred yards on their own power. But first they must be flown hundreds of miles to get within striking range.

How far the tin fish can be carried depends on the range of our planes. Range comes from extra power per pound of weight, and therefore is largely a matter of gasoline quality. With high-octane gasoline available, our engines were designed to produce more power—more miles—per gallon of fuel.

The "fighting grade" gasoline which the American petroleum industry is turning out in vast quantity for our Army, Navy and Allied planes is a triumph of chemical and engineering ingenuity. Every gallon contains Ethyl fluid to boost the already high octane rating still higher; to put in an extra punch.

Some 4000 people today are employed in the manufacture of Ethyl fluid. To all of them the sight of a plane in the sky, the sound of an engine overhead, is a reminder that their time and skill are needed.

ETHYL

ETHYL CORPORATION

ETHYL CORPORATION

Chrysler Building, New York City

Manufacturer of Ethyl fluid, used by oil refiners to improve the antiknock quality of aviation and motor gasoline.

Damon Warns 'Bureaucrats'

(Continued from page 16)

the fine work they are doing . . .

"The pioneering of shrinking the globe has been done by the Air Transport Command and the airlines will pick up where they left off. Continents and markets for your products are no longer hedged in by barriers of oceans and mountains. They have now been reduced to distances measured by hours instead of miles. The importance of a city because it was a seaport has been eliminated. This will be because the aircraft manufacturers who are now building planes to secure freedom of the air will provide you with planes to make use of that freedom. The transport and cargo planes which will be available for your use almost immediately after this war are beyond the embryonic state. Their speeds and capacities are assurance that your chances in the competition with the merchants of any other nation for a foreign market are definitely equal. If you are at all skeptical of the aircraft to come, bear in mind that while it is a brutal manner of approach, this war is serving as a test laboratory for your peacetime flying. Most of the larger transport and cargo planes developed by Curtiss, Lockheed, Consolidated, Boeing and other aircraft manufacturers to fly war materials will be further enlarged and will be taking you or your goods to far-off points normally inaccessible to other forms of transport. Aircraft manufacturers are no longer talking about 44 passenger airplanes. They are building or preparing to build planes carrying 100 or more passengers. Not more than two weeks ago, Woodhead, president of Consolidated, told of the mock-up of the 400 passenger plane his company is preparing. With such planes in the offing, it isn't unlikely that the air rates for passenger and cargo will be substantially reduced. With cargo rates which have hitherto been almost as heavy similarly reduced, it is easy to see why your business and every industry in the country, through the sale of its products, will have a hand in changing the living habits of this country and the world . . .

Won't Make Planes

"What do the auto companies in aviation offer? I do not believe that the automobile manufacturers will remain in the airplane industry following the conclusion of this war. First, all the automobile companies will have a tremendous market for their regular products due to the manufacturing restrictions, which will have been in effect for nearly three years, and secondly, because the conversion of the automobile industry to airplane manufacture, noteworthy as it has been, has shown that the glib quotation of a motor magnate a few years ago about turning out 1,000 planes a day has not and probably never will be true. In stating that I do not believe that the automobile industry will be in the airplane business, please note that I am talking about airplanes. Definitely, I feel that the automobile manufacturers will be in the motors, accessory, perhaps propeller and similar allied fields, but not in the main field of plane building itself.

Read Ads Carefully

"The next time you come across an advertisement of one of the automobile manufacturers telling a war-conscious American public of the war products he is manufacturing, it will undoubtedly show a picture of an airplane, but give the advertisement more than just a cursory glance. Read the copy and you will discover it is probably only the engine or an accessory and not the entire plane that that particular manufacturer has made, since only a few of the automobile manufacturers are producing complete assemblies of aircraft. I am not in any sense attempting to detract from the glory of the automobile manufacturer which he has justly won for turning out those engines which have enabled our aircraft industry to establish new production highs. But I do remind you that engines are not airplanes and engines cannot fly or fight alone.

"In the private flying field I believe we will see large advances in numbers of airplanes owned, but I feel we should be careful to define our terms even there. Just before the war broke out we had in this country approximately 30 million registered automobiles. We all know that it takes a negligible amount of mechanical or scientific knowledge to operate a car. Most people get by by being able to distinguish between red and green and recognizing filling stations. At the same time that we had 30 million cars we had approximately three hundred thousand licensed motor boats. I do not have to elaborate on the obvious:

More scientific and mechanical knowledge is required to operate a motor boat than is needed for an automobile. While we had all those cars and motor boats we had only thirty thousand aircraft of *all* types in this country. That figure is all-inclusive—the private planes, those owned by the Army and Navy, and the equipment flown by the airlines. Because of many contributing factors I do not believe that the ratio will be materially changed following the war. We will in all probability have more automobiles and motor boats than ever before, and more airplanes, but the increase in the number of aircraft will bear some semblance of the same proportion between automobiles, boats and airplanes as that which existed before the war. The ratio for airplanes, due to the increasing airfields, may be materially improved but it will still be far behind the numbers of automobiles, and much more comparable to the numbers of boats.

'Unlimited'

"I know now of certain post-war aviation plans and am confident that the possibilities for the transport and cargo plane are practically unlimited, except for possible political stifling. There can never again be distant places in the natural course of existence. It is easy to comprehend that when London, New York and Los Angeles are near together in terms of time, they will be much nearer together in terms of thought, habits, trade and understanding. The day is now not far off when we will be able to race the sun from New York to Los Angeles and not do a bad job—leave New York at noon and be in Los Angeles at 4:00 P.M., Los Angeles time. Going in the other direction, leave New York at 5:00 P.M. and get to London for breakfast. Leave London at eight in the evening and arrive at New York in the morning. It will take planes capable of cruising at least 400 miles per hour but as a result of what we have learned in this war those planes will be available.

"When it comes to the composition of our own towns, large or small, it is easy to see what will happen when the normal daily commuting distance to work may be stretched to 200 miles. The residential areas of the cities will then fan out in concentric circles. Naturally, this must bring about coincidental view-points and attitudes of city and country, of community and community. Through the airways of the future the understanding of America will be so broadened that it cannot help but temper the world. All this is possible practically—let us not allow bureaucrats to stop its consummation."

In the Wake of a Rout: Rommel's Afrika Korps was so frantic in its efforts to stay ahead of the British 8th Army in the recent retreat across Libya into Tunisia that it abandoned huge quantities of equipment. Shown here are wrecked planes and spare parts on the airfield at Daba. Photo is taken from the sensational British Army film "Desert Victory."

81, Full CAP Member

A. I. Martin, 81 years old and described as "America's oldest licensed pilot," has recently joined CAP as a member, along with two sons and a grandson, of Flight 213-3A, Montour Falls, N. Y., Office of Civilian Defense reports. Martin has passed a physical exam for a commercial rating, and besides drilling two hours a week, attends First Aid classes. He operates the local airport, and has made it possible "for scores" of local boys to fly. "Work, play, live and think with young people," he says.

Substitutions Save Rubber, Navy Claims

Saving of 2,000,000 lbs. of crude rubber in the manufacture of self-sealing tanks for airplanes by substituting reclaimed and synthetic rubber is claimed by the Navy Dept.'s Bureau of Aeronautics.

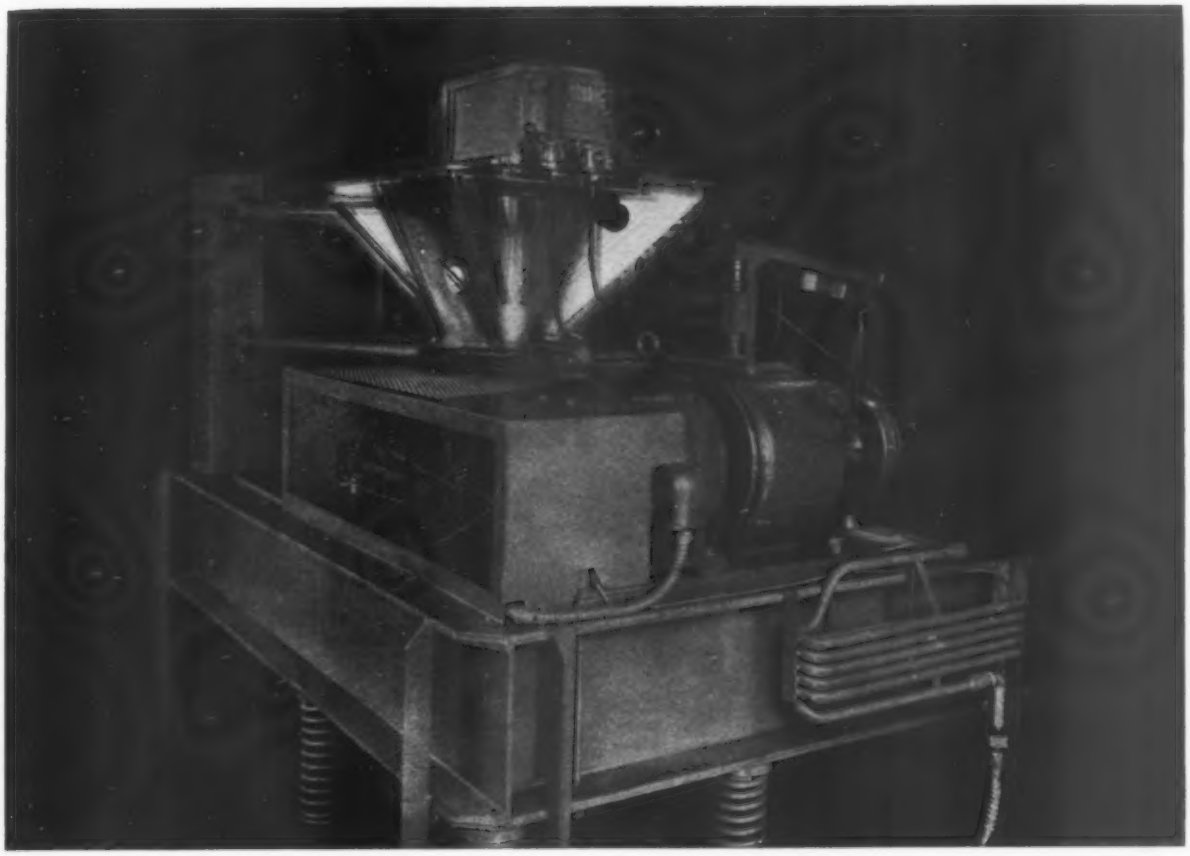
More than 350,000 lbs. of rubber is being conserved by making seal-sealing fuel hose of synthetic rubber, according to announcement, and another 350,000 lbs. is expected to be saved by using other materials in the manufacture of aviation flying boots, suit bags, life jackets, oxygen equipment, wading suits and life rafts.

Johnson Shifts

Maj. Gen. Davenport Johnson, formerly on duty at AAF Headquarters, Washington, D. C., has succeeded Maj. Gen. Robert Olds as Commanding General of the Second Air Force, with new headquarters at Fort George Wright, Washington. Gen. Olds has received a new assignment, War Dept. has announced. Gen. Johnson holds aeronautical ratings of Command Pilot and Combat Observer.

New Courses Announced

American School of Aircraft Instruments, Glendale, Cal., has announced three new courses which cover aircraft engine, flight and navigation instruments. They are grouped into pressure aircraft instruments, electrical aircraft instruments, and gyroscopic aircraft instruments, including the gyro pilot. Instruction in each course lasts for 12 weeks.



TWO YEARS AT THE FRONT!...IN TEN MINUTES

Three thousand times a minute the aircraft radio equipment atop this machine lives through an acceleration that would cause the toughest young airplane pilot to "black out" in dive bombing. In a few minutes it lives through the jars and vibrations it would receive on ten round trips from Washington to Chungking. If there is a structural weakness in its design it shows up instantly; *before* it goes into service.

This is the largest and most powerful of the various types of vibration machines used by RCA in the development and production testing of aviation radios. It can duplicate the vibration of the smallest plane or the mightiest bomber. It can re-create the tremendous vibration strain caused by one motor being shot from a bomber, or by the diving of a plane with 250 pounds of radio at *ten times* the force of gravity! — In fact, within three minutes the RCA vibrator can shake into pieces any radio set made — and it would probably shake down the building if its 6-ton concrete and steel base weren't mounted on those giant springs.

Thus, RCA research helps to make RCA's aviation radio equipment become more powerful, more effective, and more dependable, in performing its vital tasks.

RCA AVIATION RADIO

RCA Victor Division • **RADIO CORPORATION OF AMERICA** • Camden, N. J.

Truman Blames Change Orders Of Army, Navy for Plane Delays

By KATHERINE E. JOHNSEN

THE services must reduce future changes in aircraft specifications to a minimum or "accept responsibility for less production," the Truman Committee warns in its second annual report, filed in the Senate during the past fortnight. "We ought to know now what kind of planes we need," it comments.

Although only one page of the committee's 14 page general appraisal is devoted to the aircraft program, promise is made that the group "will shortly submit a separate report on airplanes."

"We are producing a very large quantity of airplanes, which will far exceed anything which our enemies can produce, but we are not producing to capacity," the report qualifies, listing as the No. 1 handicap changes in plane specifications by the services. The two other hindrances to all-out plane production pointed out in the report are: "difficulties in obtaining sufficient quantities and components of materials at the time and in the quantities needed, and . . . lack of trained foremen, supervisors, and skilled workmen."

The aircraft production planning job "is intensified by the greatly enlarged schedule of planes and the increased material requirements" by reason of a larger number of big combat types, the report observes.

If Charles Wilson can successfully deal with the problem of materials flow, the employe problem will be considerably dissolved because "the efficiency of workmen increases when they have a smooth flow of materials and when they can see concrete results from their work," it is contended.

Suggests Alloys

The group recommends that we overcome "one of the worst bottlenecks in the aircraft production program"—aluminum extrusions—by using other alloys, such as those used by the British, which would increase the capacity of our extrusion presses without unduly impairing the product and by using wherever possible rolled forms of aluminum instead of aluminum extrusions.

". . . In the case of Army aircraft the specifications require a very large number of aluminum extrusions . . . The Germans do not use nearly as many extrusions as we do, and it may be desirable for us to change our methods so as to obtain the production which the high command has determined is necessary," the report advises. "We cannot manufacture enough extrusion presses to provide all the extrusions now specified because the equipment required to manufacture more presses is urgently needed for other must programs . . .

"The Army did not realize soon enough the importance of obtaining . . . huge quantities of 100-octane gasoline, because airplane production is much greater than had originally been planned," the report asserts. "Vast expansion has been necessary and the construction of facilities to produce 100-octane gasoline is properly one of the must programs . . ."

Need Efficiency

The chief source of increased productivity must come from increased efficiency, the report emphasizes.

"If we can increase the flow of materials and the operating efficiency of the plants, the excuse for labor hoarding—that the men are held against the time when materials will arrive—will cease to exist," it explains, adding:

"Thousands of war workers from whose services no present benefit is being obtained will then be utilized. Moreover, the efficient operation of the plants and the utilization of such people will impress the workers and raise their morale and spirit so that we should be able to obtain greater production per workers. Under such circumstances, absenteeism without cause would tend to decrease. A man who would not brave a snowstorm to reach a plant where he would have to lean on a machine for lack of material would hesitate to stay home when he knew that a direct result of his absence would be less production of an article important to the soldiers at the front."

The committee claims in its present report that there "has been great improvement in the past year, particularly in recent months, in the correction of the three basic weaknesses" in our war program:

"1. Inadequate over-all planning within Government agencies at the beginning of various programs, and delay in determining basic policies necessary to carry out such programs effectively.

"2. Conflicting authority over, and responsibility for, various phases of the war program, resulting in delays and buck-passing.

"3. Hesitancy of Government to adopt unpopular or unpleasant policies long after the facts clearly indicated such policies were necessary."

"During the coming year attention must continue to be focused on the primary need for clearly defined authority in the administration of our domestic war program," the report proposes.

Praises WPB Set-up

The committee regards the "centering of authority with attendant responsibility" involved in the appointment of Charles E. Wilson at WPB "as a long step toward eliminating one of the worst organizational faults of the war set-up."

On management, the committee remarks: "Some war contractors have hoarded labor and pyramided costs. Many of the huge corporations which obtained the bulk of war contracts were slow to spread subcontracts among smaller concerns."

The report commends the great labor organizations on their "excellent job in eliminating work stoppages," stating that "splendid progress along this line has been made."

"However, it must be pointed out that the campaign to reduce absenteeism has not accomplished much," the group qualifies, adding that "many organizations have been slow to relinquish peacetime 'featherbed' and other rules that cut production, and have not hesitated to press for inflationary wage increases in the face of their own long view welfare and the nation's interest."

Congressmen Visit Martin: The House Interstate and Foreign Commerce Committee, which recently held hearings on the proposed Civil Aeronautics Act of 1943, is shown above as it paid a visit to the Glenn L. Martin factory. In the front row, left to right, are Rep. Thomas D'Alesandro (D., Md.); Alfred Bulwinkle (D., N. C.); Glenn L. Martin; Clarence F. Lea (D., Cal.) committee chairman; Lyle Boren (D., Okla.); George Sadowski (D., Mich.); Francis Myers (D., Pa.); Charles Halleck (R., Ind.); Clinton Layton (in background), committee clerk; H. Streett Baldwin (D., Md.) and Oren Harris (D., Ark.). In the second row are Charles Wolverton (R., N. J.), Lindley Beckworth (D., Tex.) and Evan Howell (R., Ill.). Other Congressmen pictured in the background are Percy Priest (D., Tenn.), Joseph O'Hara (R., Minn), Virgil Chapman (D., Ky.) and Thomas Winter (R., Kans.).

House Gets Bill to Pay Non-Combat Trainees Monthly

A recommendation that CAA's non-combatant pilot trainees receive $50 a month compensation has been submitted to the Senate Commerce Committee by Sen. Robert LaFollette (Prog., Wis.).

LaFollette urged that the committee attach his recommendation as an amendment to legislation, authorizing CPT appropriations to be spent for the training of men with military status, which has passed the House and is now pending with the Senate group.

"I hope that the (Commerce) committee will take cognizance of the plight of these men, that the amendment may afford some opportunity for consideration of the subject, and that perhaps the full committee, or a subcommittee, may go into the whole subject matter, to the end that some relief may be afforded to these men and their families," LaFollette stated on the Senate floor.

As a repercussion to LaFollette's move, R. McLean Stewart, Executive Director of Training, CAA, in a letter to Chairman Josiah Bailey (D., N.C.) of the Commerce Committee, asked for retention of civilian status for non-combatant CAA pilot trainees if compensation of $50 a month is voted them.

"It is not desirable in our judgment that the non-combatant group of trainees be called to active duty as soldiers since such action would make it impossible to employ them in a civilian status in the war effort on completion of their training," Stewart stated in his letter, read on the floor by Bailey. "Accordingly, if it is the view of the Congress that they should receive compensation at the rates which they would receive as enlisted men on active duty, it would seem desirable that arrangements be made to provide for the payment of such compensation without having them called to active duty with the Army."

Stewart indicated in his letter that "a good many complaints have been registered from various sections of the country as to the status of these (non-combatant trainees) men. Rightly or wrongly, the view appears to be held that they should be given the same treatment as has been accorded to the aviation cadet (combat) candidates for the Army and Navy."

MULTIPLICATION

★ In the month of December 1941, the United States was attacked by treachery. In anticipation of such a possibility, our Government had created a Defense Program. Under the Defense Program, by December 1941, the production of the Beech Aircraft Corporation had multiplied 12½ times over the production rate of the year 1939, when Hitler first unleashed his fury.

With war a reality, efforts were redoubled, and by December of 1942 the production rate of the Beech Aircraft Corporation had reached the astonishing level of more than *100 times* the average production rate for the year 1939.

This story, repeated all over the United States, for all sorts of weapons of war, is the prophecy of disaster for the Axis aggressors.

Comparative Rate of Beech Airplane Production

Year 1939	100%
December 1941	1,250%
December 1942	**10,000%**

A Beechcraft AT-11 Drops a Stick of Bombs

Beech Aircraft

CORPORATION

BEECHCRAFTS ARE DOING THEIR PART

WICHITA, KANSAS, U. S. A.

Senate Argues Over Post-War Titles to Foreign Air Bases

The question of post-war title to air and ship bases constructed on foreign territory cropped up during Senate debate preceding passage of an authorization of $720,000,000 for Naval advance bases "in Africa, the southern Pacific, and Japan—when we get there." The importance of U. S. policy on this subject to future airlines is obvious.

Sen. Robert Taft (R., Ohio) and Sen. Scott Lucas (D., Ill.), both members of the Senate's Post-War Planning Committee, led the debate, with Taft urging that "where possible" the U. S. should "tie strings" to the bases built with its funds, and Lucas staunchly maintaining that our job now is fighting a war, not planning for our future foreign assets. Chairman David Walsh (D., Mass.) of Naval Affairs sided with Lucas.

When the Senate is authorizing an expenditure of $720,000,000 for constructions on foreign soil, Taft interposed, "the policy should be to see that our investment is adequately protected, so far as it can be so that its value or salvage value, if there is any after the war is over, will be returned to the American people."

Walsh and Lucas pointed out, however, that "advance bases" are constructed under the exigencies of war when there is not sufficient time for international negotiation and that such bases are in the main temporary installations which will be abandoned after the immediate military maneuver.

Taft questioned Walsh who handled the authorization measure on the floor: ". . . Are we to receive a 90- or 100-year lease, or fee title to the property, so that after the war is over we will still own it, and if anyone else wants it he will at least have to pay us for it, or . . . are the bases to be built on someone else's property . . . (to) automatically revert to the owner at the end of the war?"

"I presume that when the time comes to make peace, due consideration will be given to the fact that we have bases on foreign soil which have been used for military purposes. Either the country to which they revert will compensate for them or we will hold them if it is necessary in our plan for world peace," Walsh replied, adding:

"Some bases have already been built and abandoned when the operation was finished. I understand most of these bases will be of a temporary nature. After we got possession of Guadalcanal there was no need for a number of bases which were necessary during the operation. As I understand, it is a continually moving activity. I am not at liberty to state what I understand may be the naval strategy for the Pacific Ocean during the next year. However, I believe that every Senator can appreciate that the operations will be new. They will be undertaken from place to place, from possession to possession."

Qualifying that "perhaps in certain areas it might be advisable and perhaps time would be sufficient in which to" execute Taft's suggestion of getting future U. S. rights to military bases, Lucas cited the cases of Guadalcanal and Henderson Field and remarked: "If we are to be required to negotiate for 30 or 60 days for an advance base, we might as well forget about building any type of defense in the Pacific Ocean."

Contracts for the bases authorized amounting to $250,000,000 will be made in the 1943 fiscal year, and the remainder amounting to $470,000,000 will be made during the 1944 fiscal year, according to Walsh. The Navy Supplemental Appropriation bill, which has passed the House and Senate and is now before a joint conference committee, makes $239,740,000 in contractual authority available to the Navy for the program.

REVISING HIS SCHEDULE!

Los Angeles Examiner

CAP Losses Small

CAP has since its inception flown 16,000,000 miles over water, with a loss of only about 22 pilots, Maj. Earle L. Johnson, National Commander, was reported to have testified recently before the Senate Finance Subcommittee in urging Government compensation for death or injury of civilian fliers.

Safety Records

A total of 360,190 flying hours, without a fatal accident, equivalent to 1,157 times around the earth at the equator, have been accumulated by the combined operations of Riddle Aeronautical Institute's Carlstrom Field, Arcadia, Fla., and Southwest Airways, Inc.'s Thunderbird Field, Glendale, Ariz., according to AAF Flying Training Command. Carlstrom has operated without fatal accident since it opened in 1941, and at Thunderbird, the 150,000th hour of operation without accident was recently completed.

Congress Cool

(Continued from page 13)

serve Bank of New York, comptroller of Macy's, and author of the skip-a-year tax plan, and Henry S. Dennison, president of Dennison Manufacturing Co. and vice chairman of the Federal Reserve Bank of Boston.

In its full report entitled "Part I: Post-War Plan and Program"—but not contained in a widely distributed digest—the board made the following statement regarding mixed corporations with joint private and governmental participations:

"In some sectors of the economy public interest may be served better by the use of mixed corporations than by either wholly private enterprise or outright government ownership and operation. A variety of arrangements are possible depending mainly on the relative extent of government participation. On the one hand the government's proportionate investment in the corporation might be so great that the corporation would be operated essentially as a public enterprise. On the other hand, private stockholders might own a majority interest and government representation be concerned solely with matters relating to public policy. In any case, the structure of a mixed corporation and the special authority delegated to government directors can be made to vary with the functions of the corporation and with the need for promoting the public interest."

Mixed corporations. the board pointed out, are used in the Federal Intermediate Credit Banks, the Federal Home Loan Banks and the large-scale rent projects under the Federal Housing Administration, and in a sense the Federal Reserve Banks are mixed corporations, at least in terms of management. "Moreover," says the NRPB, "many private concerns are technically taking on the character of mixed corporations through acquisition of stock by the Reconstruction Finance Corp. As a rule that corporation has not interfered in the operating details of these concerns, but has usually exercised only the prerogatives of a creditor through loans or the purchase of preferred stock."

The board cited as outstanding examples of mixed corporations in Great Britain and the Dominions, the South African Iron & Steel Corp., the Imperial Airways, and the Anglo-Iranian Oil Co.

Touching specifically upon aviation, the report said:

"In the post-war period, the mixed corporation might be an effective form of organization for certain plants in those industries of crucial importance in wartime and in which government has made great wartime investments. In this category are aluminum. magnesium, other basic metals, synthetic rubber, some chemicals, shipbuilding, and aircraft.

"Through the mixed corporations, government could participate in the selection of the areas and the business units which are to continue to operate in these industries. Moreover, government representatives could check the degree to which public assistance to these industries in the forms of contracts or special subsidies was being used to develop improved products and to reduce costs. Other fields in which this type of joint enterprise could be used for new operating units are urban redevelopment, housing, transport terminal reorganization, air transport, communications, and electric power.

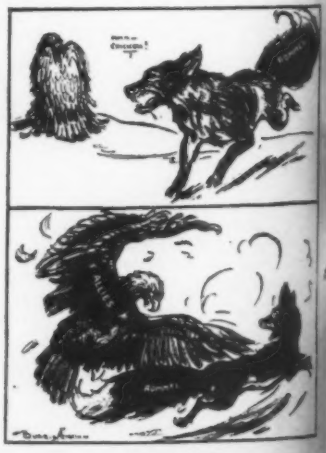
"In order to equip these mixed corporations with adequate authority to carry out development programs. government might give them special rights, such as the authority to use the power of eminent domain to acquire necessary properties. Such a set-up might facilitate the assembly of properties for reorganization and more efficient operation. Another sphere of action for these joint efforts might be the control for the government of certain patents and properties seized from enemy aliens, and of domestic patents of basic necessity in the production of war materials. In this latter instance the corporation might choose to operate the properties directly or license them to private concerns."

Truman Group Launches Study of AAF Crashes

An investigation of military air accidents has been started by the Senate's Truman Committee.

Many Senators, as pointed out in *American Aviation* for Jan. 15, have taken increasing reports in the press of Army Air Forces domestic crashes as an indication that there are basic flaws in the Army's training procedure.

Although the Army has evidenced much reluctance in the past to reveal accident figures, it has finally consented to make them available to the Truman Committee. The compilations will also cover the foreign fields, but the Committee's Chief Counsel, Hugh Fulton, has stated that the investigation will probably be mainly concerned with domestic accidents, particularly in training.



GETTING THE BIRD!
New York Daily News

The B.F. Goodrich Airplane of the month

CESSNA BOBCAT

WINGED UNIVERSITY. Many of the skilled pilots who will bomb the Axis tonight received their first Twin Engined instructions in Cessna Bobcat AT17 Bomber Pilot Trainers. This sturdy ship, used by both the United States Army Air Forces and the Royal Canadian Air Forces, has earned an enviable reputation for excellent flight characteristics combined with high serviceability. The many B. F. Goodrich products, including famed Silvertown Tires used by Cessna, have contributed to this fine record. This month B. F. Goodrich salutes the Cessna Bobcat, a great plane with a fine record on training fields throughout North America.

In war or peace

B.F.Goodrich

FIRST IN RUBBER

B.F. GOODRICH RUBBER RESEARCH FOR THE *Aviation industry*

Smooth Contour Tires for today's faster-landing military aircraft

TODAY'S WARPLANES are landing at greatly increased speeds. They're landing on military airfields . . . often short, often rough, often muddy . . . and they're coming in safely. That's because improvements in landing equipment have kept pace with increased need for safer ground control.

B. F. Goodrich has played an important part in improving warplane ground control by the development of Smooth Contour Silvertown Tires. In addition to giving the same excellent performance and endurance for which B. F. Goodrich Low Pressure Silvertowns are famous, these new tires meet two other basic needs of fast-landing warplanes:

MAXIMUM BRAKING: When warplanes come in fast on short, rough fields, they have to be able to stop quickly. And they *do* stop quickly when B. F. Goodrich Smooth Contour Silvertowns are used on wheels equipped with Expander Tube Brakes.

These brakes expand radially against the entire inner surface of the brake drums. The B. F. Goodrich Smooth Contour Silvertown was specially designed with a large bead diameter which permits the use of larger wheel rims and consequently larger brake drums. This, in turn, increases the braking surface and the grip of Expander Tube Brakes so that they can stop fast-landing warplanes quickly.

MAXIMUM GROUND CONTACT: Warplanes must be able to maneuver fast on the ground, too, without the danger of skidding. B. F. Goodrich Smooth Contour Silvertowns have *a wide footprint* and non-skid tread which meet the need for maximum ground contact and stability.

Right now, the B. F. Goodrich Smooth Contour Silvertown is proving its worth on world battlefronts. It is filling the need for safer ground control at high speeds. And it's just one more reason why leading aircraft manufacturers specify with confidence, "B. F. Goodrich Aviation Equipment."

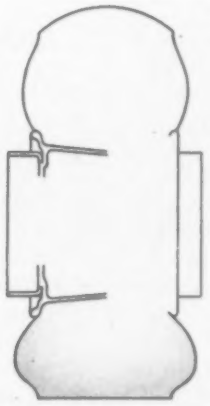
MAKERS OF B. F. GOODRICH TIRES AND OVER 80 RUBBER AND SYNTHETIC RUBBER PRODUCTS FOR AIRPLANES

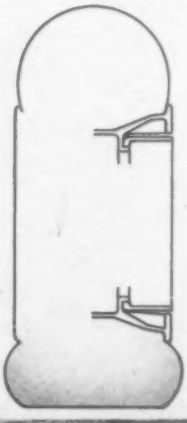
ARMY E NAVY

Why Smooth Contour Silvertowns mean

SAFER LANDINGS AT HIGH SPEED!

The advantages of Low Pressure and Smooth Contour Silvertowns are shown in these sketches. The Low Pressure Silvertown (a), with smaller bead diameter, has adequate braking surface for transport and slower-speed ships, *plus* extra cushioning vital in many operations. The Smooth Contour Silvertown (b), with much larger bead diameter, provides room for the extra braking surface needed to stop a fast warplane quickly. It offers the advantages of both high pressure and low pressure tires, modified to meet military requirements of speed.





Note the wide footprint and non-skid, self-cleaning tread—both features of B. F. Goodrich Smooth Contour Silvertowns which assure maximum ground contact and stability.

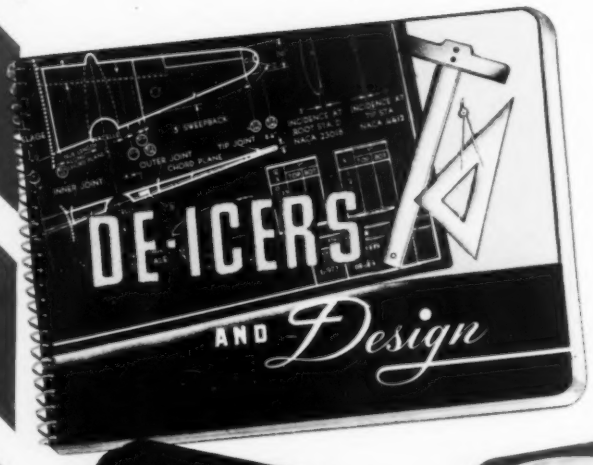
This test tells the tale. The heavy road wheel on this machine is rotated to simulate landing speeds up to 150 m.p.h. When the desired speed is reached, tire is thrust against road wheel and braking applied until it comes to a full stop. By timing this operation, the exact rolling distance can be found.

In war or peace

B.F.Goodrich

FIRST IN RUBBER

De-Icer Slide Film for Designers—Now Available!



ALL DESIGNERS OR MANUFACTURERS OF AIRCRAFT SHOULD SEE THIS IMPORTANT STEP-BY-STEP STORY OF DESIGN FOR DE-ICER PROTECTION. This reading slide film sets forth the "know-how" of providing the best De-Icer protection for your new airplanes in a clear, detailed manner that technical men will appreciate. Some of the topics covered are design procedures, types, methods of installation, basic air supply system, attachments, and aerodynamics of the De-Icer.

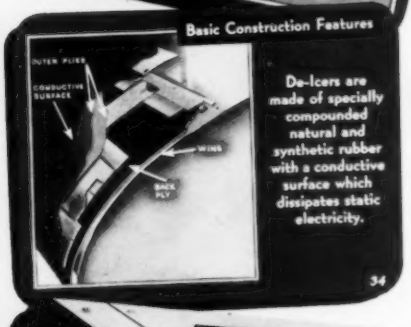
A reproduction of the film is presented in an attractive, pocket-size booklet, and copies are available to designers and engineers on request.

The pictures on this page will give you a hint at the data you may expect to find in the film. If you have any part in the planning of airplane design, be sure to send us your order, as explained in the ordering instructions below.

Other films in the series, announced earlier, are "The Development of the De-Icer," and "De-Icer Servicing and Installation."

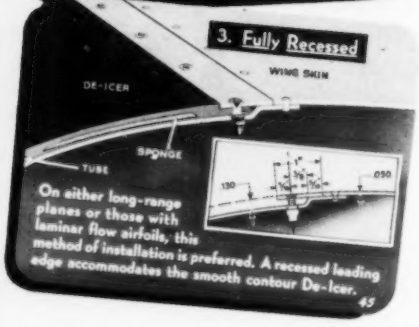
De-Icer Attachment
Let us examine the De-Icer attachment more closely. Here are the main elements — Rivnuts — act as nut plates to hold the Screws — that fasten the De-Icer bead and Fairing Strips — that clamp the beads and fair the contour smoothly into the wing.
FAIRING STRIP
DE-ICER
WING
RIVNUT
ASSEMBLED

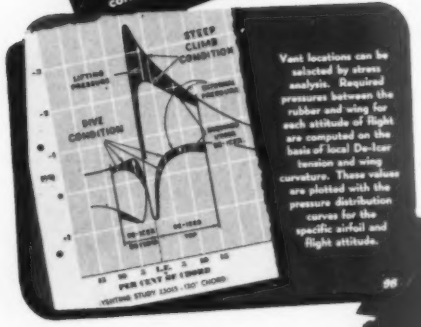
A general description of the various units as they are used in a typical system will be given next. Detailed information on all De-Icer accessories is available from Eclipse Aviation.
83

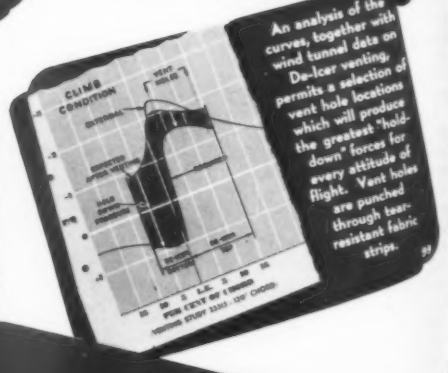

Basic Construction Features
OUTER PLIES
CONDUCTIVE SURFACE
WING
BACK PLY
De-Icers are made of specially compounded natural and synthetic rubber with a conductive surface which dissipates static electricity.
34

De-Icers for large duct openings may have special beads to permit smooth attachment within the duct, using regular Fairing Strip. Rubberized patches seal corner notches to prevent the entry of air and water.
47

In protecting wings with fixed slots, the bottom side of the wing to the slot should be protected with movable portions of the De-Icer. The De-Icer bead can be notched to permit concealed installation of the attachment with standard Fairing.
BEFORE INSTALLING
LOWER DE-ICER
NOTCHES BEAD


3. Fully Recessed
WING SKIN
DE-ICER
SPONGE
TUBE
130
.050
On either long-range planes or those with laminar flow airfoils, this method of installation is preferred. A recessed leading edge accommodates the smooth contour De-Icer.
45


STEEP CLIMB CONDITION
DIVE CONDITION
Vent locations can be selected by stress analysis. Required pressures between the rubber and wing for each attitude of flight are computed on the basis of local De-Icer tension and wing curvature. These values are plotted with the pressure distribution curves for the specific airfoil and flight attitude.
98


CLIMB CONDITION
An analysis of the curves, together with wind tunnel data on De-Icer venting, permits a selection of vent hole locations which will produce the greatest "hold-down" forces for every attitude of flight. Vent holes are punched through tear-resistant fabric strips.
99

HOW TO ORDER—All the De-Icer slide films and booklets are available without cost when requested on your business letterhead. Address your inquiry to the B. F. Goodrich Co., Dept. 7191, Akron, Ohio. The booklets will be furnished in sufficient quantity for all members of your organization who might be interested. "De-Icers & Design" will be especially helpful to airplane manufacturers, designers and engineers, while "Development of the De-Icer" and "De-Icer Servicing and Installation" will be of interest to everyone concerned with De-Icer operation, maintenance and servicing.

B. F. Goodrich
Aeronautical Division
Akron, Ohio

Letters

Washington, D. C.

To the Editor:

I was perfectly delighted with your editorial in the March 1 issue entitled "U. S. Imperialism in the Pacific." Word for word, you expressed exactly my own views. I have held these views for many years, and after my tour of duty in the Pacific last summer I was more convinced than ever of their correctness. I have been fighting for the principles involved in these views ever since, and I intend to keep it up.

Congratulations and more power to you!

MELVIN J. MAAS,
House of Representatives.

•

Kansas City, Mo.

To the Editor:

Churchill said in substance:

"So that there may be no misunderstanding we intend to keep our own."

England saved the world from Hitlerian slavery and wouldn't it be a fine display of gratitude to attempt to seize her islands in the Pacific.

Thank God the vast majority of Americans are not Moronic Myopes.

W. G. LAURENSON.

•

Frankfort, Kansas.

To the Editor:

The daily papers quote a recent editorial in your magazine as urging a definitely and openly avowed imperialistic program with regard to the Pacific area following this war, on the part of the United States.

Now that is undoubtedly a good policy, if—

1. You want to see American boys killed by thousands in a continuing war.

2. You want to load America down with an endless burden of taxes.

3. And all in order that a few selfish, grab-it-all American individuals and corporations may get rich.

Otherwise it is the rottenest program you could possibly formulate.

You talk of "benevolent imperialism." There is no such thing. England does not hold India for India's good, but for what Englishmen get out of her. We held the Philippines, not for what we could do for them, but because of what Americans got out of them, and the objection to giving them their independence came from that source. Japan wants them for the same reason. You and others will get over this grabbing idea, or else you will destroy our America.

WRIGHT M. HORTON.

•

Dallas, Tex.

To the Editor:

It has been a long time since I have written to anyone to offer commendation for an editorial or article, but I feel that I must do so in this instance. Congratulations!

Your editorial entitled "U. S. Imperialism in Pacific" in the Mar. 1 issue . . . is a marvelous example of advance thinking on a subject that is dear to all of us in the aviation industry. You have unquestionably struck the keynote for one of the most important points of consideration from the standpoint of our country at the peace tables following the close of the war.

JOHN E. COOK
Superintendent of Rates, Reservations and Schedules.
Braniff Airways

•

Washington, D. C.

To the Editor:

I have just received a clipping from the February 1 issue of *American Aviation* entitled "U. S. Lab Steps Up Plane Plywood Research Work."

In this article the following statement is made: "Gum is being used extensively to replace mahogany, no longer imported." This is a very gross misstatement of the facts. Mahogany was imported very substantially for war work during 1942 and the program for mahogany exports as sponsored by the Board of Economic Warfare under Defense Supplies Corporation contracts for 1943 is very substantially larger than 1942.

The programs for the production of wood aircraft and for PT boats are based upon a very large importation of mahogany for this purpose.

GEORGE N. LAMB, *Secretary,*
Mahogany Association, Inc.
Chicago.

(Reader Lamb is correct—mahogany is still imported. WPB's lumber and lumber products division says the amount imported in 1942 was less than 1941.—Ed. Note).

•

Syracuse, N. Y.

To the Editor:

Needless to say I experienced no little feeling of warmth and pleasure on reading in your March 15 issue your editorial commenting on our recent advertisement on postwar private aviation. All credit to Steve Webb and his henchmen and many thanks to you on their behalf.

LEWIS E. PIERSON, JR.
President
Aircooled Motors Corp.

•

Syracuse, N. Y.

To the Editor:

Many, many thanks for the kind words in your editorial, "The Right Approach" in *American Aviation* for March 15. If you really mean it about the framed reproduction, we'll send it along to you practically immediately.

STEPHEN M. WEBB
SPITZ AND WEBB
Advertising Agency

(Editor's note: You bet we mean it.)

•

Africa.

To the Editor:

Opinion: a damn fine magazine, with precisely the sort of coverage most appreciated by personnel of commercial airlines. Neither too technical nor too general.

J. A. REID, JR.
Pan American Airways

★ ★ ★

People

Wagner Mrs. Haddock Horton Miss Church

Grant McConachie, general manager, and **Bernard Phillips,** assistant general manager, of Canadian Pacific Air Lines' western lines, recently spent a week in Los Angeles inspecting plants of Lockheed and Douglas . . . **John C. Leslie,** division manager of Pan American Airways, has been elected to the Council of the Institute of the Aeronautical Sciences . . . Superior Court Judge **Ernest D. Wagner** recently applied for a job in one of Vega's California plants, planning to work after court sessions.

Laura Burns, who was taught to fly by Amelia Earhart, is now working as an inspector in Brewster Aeronautical Corp.'s flight test department in Johnsville, Pa. . . . **Mrs. Josephine M. Haddock,** one of the oldest living parachutists, is now employed at a U. S. Naval Air Station in Massachusetts . . . **Miss Ellen E. Church,** first of eight stewardesses employed by United Air Lines in May, 1930, has been reported to be a member of the first Army Air Evacuation Unit in North Africa.

George Pelletier, formerly aviation editor of PROVIDENCE JOURNAL-BULLETIN, is now a lieutenant in public relations for the Navy . . . **Joseph R. Horton** has been appointed vice president of Embry-Riddle Co., Miami, in charge of aircraft and engine overhaul divisions . . . **John M. Stuart,** former publicity director for Fairchild Engine and Airplane Corp., has joined Ziff-Davis Publishing Co. as Washington editorial representative, and **Leo Kieran,** who used to handle Z-D's eastern advertising, is now eastern editorial representative.

Ernie Miehle, American Airlines' traffic representative in Los Angeles, is new chairman of Los Angeles Junior Chamber of Commerce Aviation Committee . . . Counselaire **Clara Spencer,** for two years in Western Air Lines' downtown traffic office, will be in charge of new Hollywood traffic office to be opened at 6331 Hollywood Blvd., site of general offices moved last week from Burbank . . . **Clyde S. Fullerton,** director of training and manualization for TWA, was recently in Los Angeles on a week's visit during which he lectured at airline training classes held at University of Southern California and Los Angeles City College.

(Last issue in this column we were royally bawled up (and out) on the note that George H. Scragg, director of advertising and sales promotion for The White Motor Company, is editor of "The Beam." This much is correct but we said "The Beam" is the official organ of the Early Birds. We should've known better. "The Beam" is the official organ of the Quiet Birdmen. The official organ of the Early Birds is the "Chirp," edited from its inception by Major Ernest Jones. Sorry, Messrs. Scragg and Jones.—Ed. Note)

Obituary

Lt. William Sheldon

Lt. William Du Bose Sheldon, USNR, 29, well-known aviation attorney, died Mar. 10 at the Marine Corps Air Station, El Centro, Cal., shortly after his return from the Southwest Pacific and Guadalcanal.

A native of Washington, D. C., Lt. Sheldon was a graduate of Western High School, Princeton University and the Harvard University law school. He was associated with the Washington law firm of Covington, Burling, Rublee, Acheson and Shorb, and while with that firm handled numerous legal matters for the Air Transport Association, specializing in Air Traffic Conference activities.

He joined the Navy as an aviation volunteer specialist shortly after declaration of war, and was attached to the aviation unit of a carrier. With this unit he was transferred to Guadalcanal where he served until December, 1942. He had been recommended for citation for award of the Silver Star.

Lt. Sheldon was buried in Arlington National Cemetery with full military honors.

PAA Gets New Orleans—Guatemala Route; Export's Application Denied

CAB Awards New Line on Temporary Basis

A TEMPORARY route between New Orleans and Guatemala City via Merida, Mexico, was awarded Pan American Airways by the Civil Aeronautics Board on Mar. 16, following approval of President Roosevelt.

At the same time, the Board denied applications of American Export Airlines for routes between New Orleans and Balboa, Canal Zone, and between New Orleans and Havana.

The PAA certificate will expire at the end of three years. "In view of the enormous importance of air transportation in future international relations, whatever general reconsideration of basic international aviation policy which this government may be called upon to undertake in the immediate post-war period should not be hampered by a decision of the Board granting an unlimited authorization in this proceeding," CAB explained.

To Start Soon

Because no new equipment will be necessary, PAA will be permitted to inaugurate service as soon as possible.

In selecting PAA instead of Export to perform the service, the Board asserted that "the difference in the cost of the two proposed operations is of such magnitude as to outweigh any benefit which might accrue by the inauguration of a competitive service by an American flag carrier at this time."

PAA, the Board noted, now operates between Guatemala City and Balboa. By the addition of 1,075 miles of new route it can furnish transportation from New Orleans to Merida, Guatemala City, other Central American cities and the Canal Zone, it added.

"Export's proposed operation to the Canal Zone would involve the establishment of 1,950 miles of new route with resultant expenses of establishing and maintaining facilities for such operation. Pan American presently operates into all points to be served, except New Orleans, while the entire route would be a new operation for Export. Pan American estimated that capital expenditure of $177,000 for additional ground equipment would be necessary. Export estimated capital requirements in excess of $1,200,000 not including the cost of the Consolidated 28 and S-44 aircraft."

Export, the Board continued, would have a "new and comparatively short route and by operating only to the Canal Zone Export would be completely dependent upon connecting carriers for through traffic. Under these circumstances it is questionable that such a competitive operation from the United States to Central America at this time would prove a satisfactory standard of comparison with Pan American."

The proposed Export operations, the Board contended, "could hardly be expected to approach any degree of self-sufficiency at an early date, whereas Pan American is rapidly approaching that stage in its Latin American operations. This is illustrated by our recent decision wherein the rate of mail compensation received by Pan American under its contract with the Post Office Dept. was reduced from about 82c per revenue mile for the year ended Dec. 31, 1941, to 17.83c per airplane mile on and after Sept. 1, 1942."

REA Reports All-Time Highs

New all-time highs have been reported by the Air Express Division of Railway Express Agency. During 1942, gross revenue exceeded $9,000,000, an 111% increase over 1941. Weight of shipments totaled 10,582 tons, 93% more than in the previous year, and number of shipments amounted to 1,405,320, 7.5% over 1941.

Average weight of shipments increased from 8.6 lbs. to 15.4, average charge per shipment went up from $3.27 to $6.43, and at the end of 1942, more than 35 tons of air express were being flown daily.

International air express shipments totaled 182,000, 27% higher than in 1941, and revenue from this type of traffic was up 97%. Combination rail-air shipments were 320,167 in 1942, a 24.3% increase over 1941.

WAL Profits Increase Despite Mileage Cut

Western Air Lines, Inc., Los Angeles, Cal., reports net profit on 1942 operations of $693,703.30, equal to $1.69 each on 409,954 shares outstanding, which compares with profit of $5,980.64 in 1941. Provision of $315,000 was made for 1942 Federal income taxes.

Operating revenues totaled $2,375,056.59, despite a decrease of 26.1% in revenue miles flown. Passenger revenue amounted to $1,242,540.81, 17.7% over 1941; mail revenue was $760,572.94, 10.4% lower than the previous year, but air express was $166,944, 141.9% above 1941.

Western attributes this improvement in income, especially passenger revenue, which accounted for 52.3% of gross revenues, to "increases in passenger load factors, revenue passenger miles flown, and air express . . . (and) an adjustment of the allocation of ground costs to commercial operations."

Operating and general expenses were $1,582,159.59, which Western believes "may not be effectively compared with those of previous years because a substantial portion of such costs have been allocated to other than commercial operations and because of the material change in operations resulting from the loss of equipment and the decrease in schedules flown."

During 1942, the line had a personnel increase of 66.5% to a total of 593, consisting of 178 women.

Concerning the future, company feels that "Larger and faster equipment is a certainty. Existing routes may be expanded and supplemented with feeder routes, and indications are that air cargo will play an important part in the future world commerce."

Balance sheet as of Dec. 31, 1942, shows total assets of $2,512,150.29 and current assets of $1,643,647.18, including cash, $572,115.31.

C&S Future Headquarters: Here is an artist's conception of what Chicago & Southern Air Lines' general offices at Memphis Municipal Airport will look like when completed. Construction of the building, which will cost between $60,000 and $80,000, started last month.

R. E. Lees Named Economic Research Director for TWA

Robert E. Lees, assistant vice-president of Rubber Development Corp., branch of Defense Supplies Corp., has resigned that position and about Apr. 1 will become director of Economic Research for Transcontinental and Western Air, Inc., with headquarters in Kansas City, according to the company.

Lees

At one time affiliated with Kellett Autogiro Corp. and the old Pitcairn company, Lees since 1934 has been connected with Government aviation agencies. He was first Deputy NRA Administrator in charge of air transport, commercial aviation and other transport activities.

In 1936 he was appointed chief of the Aeronautical Section of the U. S. Maritime Commission, and in 1940 joined the aircraft section of Office of Production Management. When OPM became WPB, Lees was made chief of the Aircraft Priorities Branch, remaining until last December, when he became assistant to Reed Chambers, vice-president of Defense Supplies Corp.

Lees is a native of McKeesport, Pa.

EAL Revenues Up, Nets $1,885,503

Increased operating revenues during the year ended Dec. 31, 1942, $15,355,809, as against $13,666,591 in 1941, enabled Eastern Air Lines to show net profit of $1,885,503, equal to $3.28 on each of 575,608 common shares, opposed to $1,609,706, or $2.81, in 1941, as disclosed in EAL's annual report.

Federal income taxes for 1942 amounted to $627,904, and excess profits tax, after $350,000 post-war credit, was $3,150,000. President and general manger Eddie Rickenbacker pointed out, however, that exact interpretation of excess profits tax sections of the Internal Revenue Code has yet to be made, and that until that has been done, provision will be made by EAL for this contingency. Should this not be a liability for 1942, "total provision for Federal taxes on income will be reduced by approximately $2,000,000."

Balance sheet as of Dec. 31, 1942, shows total assets of $18,710,428, and current assets of $15,250,122. Current liabilities are listed as $6,055,037. Earned surplus was $6,179,134.

TWA Reelects

At recent stockholders' meeting, all directors and officers of Transcontinental and Western Air, Inc., Kansas City, Mo., were reelected.

Sub smasher

To smash a sub, you first find the sub. That takes a fairly large bomber with a fairly long range, for oceans are big and subs are small.

After you find your sub you go into a power-dive, *quick*, and drop your bombs. U-boats now crash-dive in just 20 seconds. Ordinarily you can't do much of a power-dive with a medium bomber —not and stay in one piece.

But you can in a Lockheed Hudson bomber! Lockheed Hudsons hold the official RAF Coastal Command record for having smashed more subs than any other warplane.

The reason is simple. The Lockheed *Hudson*, like the Lockheed *Lightning* and the Vega *Ventura*, was designed, engineered and built to provide *extra* strength and *extra* dependability. It has been used by the RAF longer than any other American bomber.

for protection today, and progress tomorrow, look to

Lockheed

FOR LEADERSHIP

Vega Ventura medium-range bomber

Lockheed P-38 Lightning fighter

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Air Transport Will Preserve Peace—Pogue

The development of a world air transportation system would introduce into world affairs, "with original and telling force, the fundamental material factor which has operated nationally to produce social understanding, economic wealth and unity," L. Welch Pogue, chairman of the Civil Aeronautics Board, told the Federal Bar Association of Washington, D. C., on Mar. 18.

"For the first time in history," he said, "it will be possible to speak of a world community in which the peoples of the world will be only hours apart, and thus close to that mutual understanding and tolerance of the lives and habits of their neighbors which will contribute mightily toward enduring peace.

"In the enlightened use of the airplane for the development of economic wealth and social understanding rests the future peace and happiness of the world."

The expert organizations of the U. S. airlines and their highly trained personnel "were presented to the nation ready-made, so to speak, at the outbreak of the war," Pogue asserted. "They were prepared for whatever service they might be called upon to perform in the all-important field of military and auxiliary military air transportation. This preparedness proved to be a wartime asset far beyond expectation and even as yet of unmeasured value."

The hundreds of thousands of planes which we have on our war program have resulted "in the concentration of engineering and technical talent in the manufacture of aircraft and their accessories which will result in advancing the art of aviation and its technology by an incalculable number of years; let us say 50 years—it may be more, it may be less; but the advance has truly been large . . .

"Sociologically and economically, the fundamental material factor in so closely knitting these United States has been the establishment of an unexcelled transportation system. In recent years, air transportation has been an increasingly important factor in this system. After the war this fledgling industry may become the major force.

"The airplane, economically and socially powerful in peacetime, has also the increasing potentiality of becoming the greatest instrument of destruction the world has ever known. We must adjust our thinking to conceive of a world in which we must all live in peace or suffer the risk of death from the air. In the air must this war be won. In the air must the peace be preserved."

TRANS-CANADA AIR LINES in January flew 278,933 lbs. of mail, compared with 128,103 in January, 1942, hauled 47,289 lbs. of express, against 13,564, and carried 8,003 passengers contrasted with 5,811.

Air Mail Catastrophe

(An Editorial)

Postmaster General Frank Walker said in Los Angeles recently that air mail may be limited to government and military business because of a shortage of airplanes. He hinted that civilian air mail might be restricted to a 500 mile radius. Bewailing the requisitioning of half the air transport planes in the country by the Army, he said he hoped to get priority for transport airplanes "but if we can't, the answer is clear: drastic curtailment."

What a shocking admission of the deterioration of the Post Office Department's administration of air mail! What an astounding lack of planning and gumption! For years the Post Office Department was entrusted with the responsibility of developing and expanding air mail in this great country. "The mail must go through." For years the P. O. Department played politics, placed shackles on the operators—and made big profits on air mail. And now the P. O. sits back, whimpers like a sick pup, and betrays a stupidity of public administration that has had few counterparts in U. S. national life.

In Canada air mail has a priority. No military leader can oust air mail from its place on transport planes. Every nation in the world recognizes the vast importance of speedy mail delivery except the United States which has consistently tagged along at the end of the parade. How about the hundreds of thousands of American citizens who paid out extra money in the early days to send their mail by airplane in order to advance this method of delivery? How about the airlines who promoted air mail at much cost in order to develop business and aid commerce?

Postmaster General Walker sat complacently by when the Army requisitioned transport planes. He has not made a serious effort since then to insure speedy air mail deliveries. And now he tells this country that civilians may not be able to use the air mail service when only a very few more airplanes would remove every bottleneck in the nation. It is a tragic, inexcusable and blundering shame—the culmination and climax of maladministration and lack of guts.

Airlines Prepare Answers To CAB on Fare Reductions

As this issue went to press 11 of the domestic airlines were preparing answers to the Civil Aeronautics Board's order asking them to show cause why their passenger fares should not be reduced 10%.

On Mar. 15-17, representatives of these airlines met in Washington to attempt to formulate a passenger fare reduction acceptable to the Board. After three days, however, they decided to file individual answers to the Board's order.

Among proposals presented by the airlines to CAB during the three days was one known as "three tens and a half," under which the companies would establish a 10% discount on round trip tickets, air travel card plans and government travel, and half fares for children between 2 and 12.

However, when the plan was presented to CAB by a committee (Jack Frye of TWA, O. M. Mosier of American and C. E. Woolman of Delta) it was rejected as unsatisfactory. The Board, it is said, felt that such reductions would be "sales methods" and might also be discriminatory.

Rejection came as somewhat of a surprise to the airlines, inasmuch as the show cause order had stated that fares should be reduced to approximately the levels of last July, at which time round trip discounts, scrip and government discounts and half fares were eliminated. Some officials had interpreted this statement as an invitation to restore the discounts.

Apparently, it was said, CAB's thinking on the subject had changed. Apparently it now wants a flat 10% reduction in the basic rate structure.

It is known that some airlines are willing to go along with this thinking, but whether it will be unanimous is not known. After answers are filed, lengthy hearings may be held, with the prospect that the rate structure will remain muddled for some time to come.

Airlines affected by the show cause order are American, Braniff, Chicago & Southern, Delta, Eastern, National, Northwest, Pennsylvania-Central, TWA, United and Western.

Carsello Appointed

George Carsello, recently general foreman, has been appointed supervisor in charge of air express, Los Angeles and vicinity, for Railway Express Agency, Inc.

Airline Statistics Service Set Up By AMERICAN AVIATION

American Aviation Reports, a new statistics reporting service for the aircraft and air transport industries, is announced by *American Aviation Associates, Inc.*, effective Apr. 1.

Each subscriber will receive extensive summaries of the individual monthly reports as soon as they are filed by the domestic airlines with the Civil Aeronautics Board.

These summaries wil be distributed, as received by CAB, in two sections. Part one of each airline's report wil linclude all important traffic figures, in totals as well as by individual air mail routes. These figures will include pounds and pound-miles of mail, express, and excess baggage; passengers carried, both total and revenue; passenger miles, total and revenue; available seat miles operated; revenue passenger load factor; trips scheduled, started, extra sections, and trips completed; aircraft performance factor, including scheduled miles and scheduled miles flown, percentage completed; aircraft miles flown, as well as revenue plane miles flown; engine hours flown, total and revenue; aircraft fuel and oil consumed, and aircraft hours flown, both total and revenue.

Part two of the summaries sent to subscribers will carry various breakdowns for operating revenues and expenses for each line, including net profit or loss for the month and for the year to date, and various balance sheet items. Also recorded are the number and types of aircraft owned, rented, and operated.

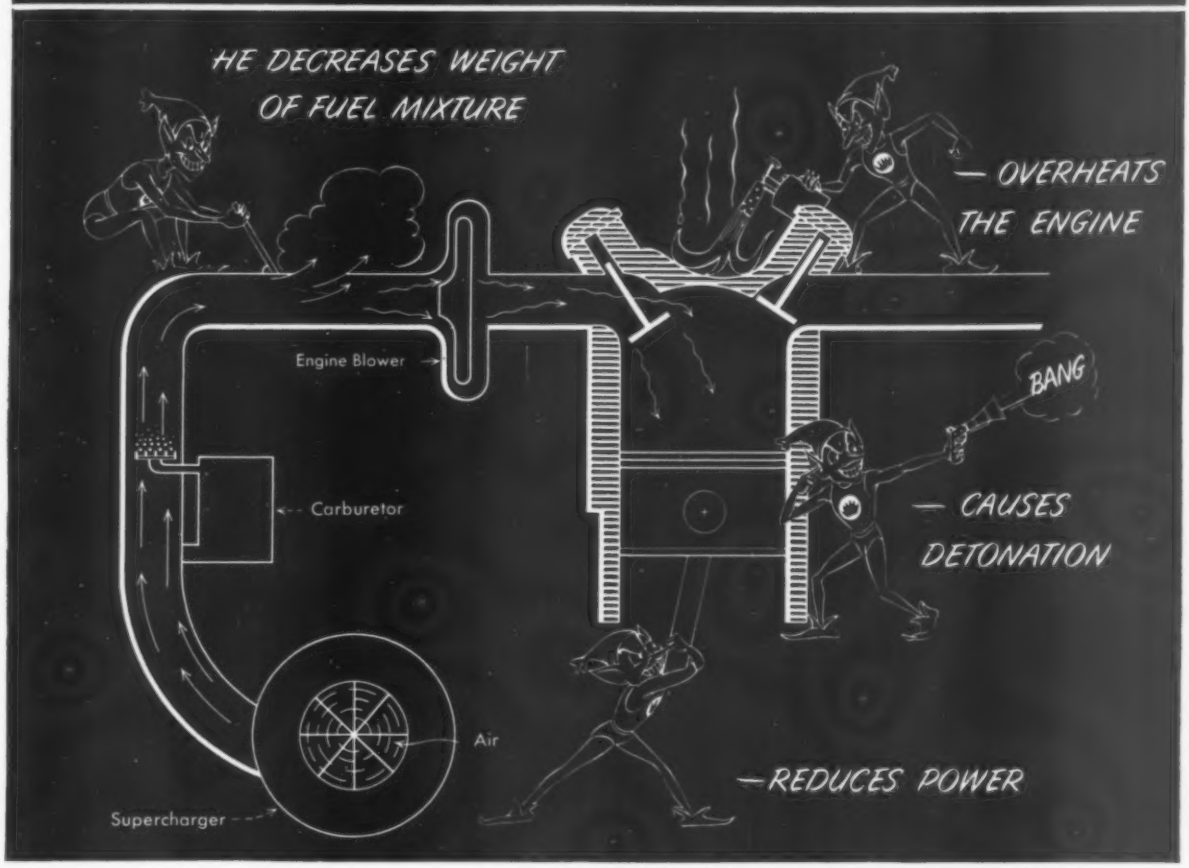
The regular reporting service, whereby current reports will be mailed to subscribers immediately upon receipt by the Board, will start Apr. 1. Within a few weeks, *American Aviation Reports* will be staffed and equipped to furnish, upon special order, any public figures which have been filed with CAB in the past three years. Fees for special services will vary with the work involved. The War Dept. only recently lifted censorship on all domestic scheduled airline statistics not involving work done by the lines under contract to the Army or Navy.

Inquiries on either the regular reporting service or special assignments should be addressed to American Aviation Associates, Inc., American Building, Washington, D. C.

DC-3s to PLUNA

Two new Douglas DC-3 transports were recently delivered to the PLUNA airline in Uruguay, the full name of which is Primeras Lineas Uruguayas de Navegacion Aerea. Both planes are now in service. Principle route of the company is from Montevideo, capital of Uruguay, to Ascuncion, Paraguay, with additional service to the interior of Uruguay. Arrangements for purchase of the equipment were made through the Defense Supplies Corporation in Washington.

Hot air is the supercharger "gremlin"...



AiResearch Intercoolers *provide control that helps raise critical altitudes*

THE SUPERCHARGER in compressing air *heats* it considerably. And as increasing altitudes require more and more air compression—this heat makes it tougher for the power plant to maintain its normal rated power. Thus hot air becomes a "gremlin" that reduces the critical altitude of the power plant.

How well AiResearch Intercoolers have curbed this heat "gremlin" is now proven. Today, on every Allied front, these Intercoolers are helping increase the density of carburetor air intake—helping the power plants of American-made warplanes to deliver *added useable power at critical altitudes.*

Ruggedness is an outstanding feature of the AiResearch Intercooler, despite its extremely light weight. It is manufactured of heat-treated aluminum alloys. Tubes are mechanically fastened and jig assembled—they stand up against back-fire.

And, the entire assembly is anodized for protection against corrosion ... another reason why the AiResearch Intercooler provides freedom from maintenance trouble.

AiResearch Intercoolers are manufactured in flattened or round tubular units ... adaptable to every shape and size requirement. And the intercooling experience of the engineers who developed them is available to all aircraft manufacturers. Inquiries are invited.

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"Where Controlled Air Does The Job" • **Engine Oil Cooling Systems • Engine Coolant Systems**
Automatic Exit Flap Control Systems • Supercharger Aftercooling Systems

States Claim Legal Precedents For Levying Gas Tax on Airlines

By CLIFFORD GUEST

RECENT action of the Virginia Supreme Court of Appeals in upholding a state tax on gasoline used in interstate aircraft operation emphasizes a trend toward more and more legal precedent on which states can base their claims for aviation gasoline taxes, regardless of the predominance of interstate commerce factors in most airline operations.

A review of court cases and opinions of attorneys general involving aviation gasoline taxes during the past decade shows cases arising in nearly a score of states, and an overwhelming majority decided in favor of the state taxing authorities.

In most cases it was held that such state taxation does not violate the commerce clause of the Federal Constitution—the claim most frequently advanced by airline operators.

In two cases it was held that an airline's interstate and intrastate operations were so commingled that the gasoline tax could not be apportioned between the two classes of operation and, therefore, was unenforceable. Other court decisions and opinions involved such questions as taxing gasoline purchased in one state and stored in another, and whether a tax should apply on gasoline used in pilot training, or in ground tests and flight tests of planes.

Not Discriminatory

In the Virginia case, brought by American Airlines, Inc., the Supreme Court of Appeals held that the imposition of a tax on gasoline consumed in aircraft operated in interstate commerce, and making no trips which begin and end within the state, does not impose a discriminatory or regulatory burden on such interstate commerce. The court denied the airline's suit for refund of a portion of the tax and justified the imposition of the tax as a reimbursement to the state for expenses incurred in providing suitable aircraft facilities within the state.

The airline had paid a tax of five cents per gallon on gasoline purchased within Virginia. Upon application for a refund, the state granted a refund of two cents per gallon, but retained the balance. The history of the case highlights the trend in placing liberal construction upon state taxing powers.

During the period covered in its allegations, American Airlines did no intrastate commerce within the state of Virginia and the only place in Virginia where its planes landed or took off was the old Washington-Hoover airport, near Washington, D. C.

In passing on the issue of interstate movement, the Court of Appeals cited the Virginia statute which applied—Chapter 71 of the Acts of Assembly of 1940—and quoted the following language from the statute:

"That there be, and hereby is, imposed, and hereby required to be paid, through medium of deduction from refunds as now required by law, . . . a tax of three cents on each gallon of gasoline purchased in this State for use and used by intrastate operators in the propulsion of airplanes or any kind of aircraft; and a tax of three cents on each gallon of gasoline purchased in this State for use and used by interstate operators in the propulsion of airplanes of any kind of aircraft in intrastate operations and within the borders of the State of Virginia, the amount of tax to be based on the flight logs of each trip and average consumption of gasoline per hour per month."

Court's Decision

The court's decision then set forth the following reasoning:

"The difficulty, if any, is not in the meaning of the several words, but in the phrasing of the words, that is, in the two phrases 'interstate operators in the propulsion of airplanes or any kind of aircraft in intrastate operations,' and 'and within the borders of the State of Virginia.'

"The common and accepted meaning of intrastate means 'within' or 'on the inside.' An 'intrastate operation' is an operation which during its whole course of flight or transportation is within the jurisdiction and confines of a single State.

"An 'interstate operator' of airplanes may be engaged in both intrastate and in interstate operations. His interstate operations include continuous flights from one State to another State. For a part of such interstate journeys the planes are propelled within the borders of each State over which they fly.

"The two phrases are in the conjunctive, being joined by the word 'and.' If only interstate operators engaged in intrastate operations were intended to be covered, there would be no occasion to use the second phrase 'and within the borders of the State of Virginia,' because all intrastate operations are within the borders of one State. Giving effect to both phrases, as we are required to do, they embrace gasoline purchased for use and used by interstate operators both in their intrastate operations and in so much of their interstate operations as take place 'within the borders of the State of Virginia.' . .

"In addition to the meaning of the language itself, there are two other reasons to support our conclusion. The last clause of Section 2 of the 1940 Act provides that 'the amount of tax to be based on the flight logs of each trip and average consumption of gasoline per hour per month.' No such provision is necessary for intrastate flights for, in such flights, the measurement can be made from the tanks. That the measurement of gasoline used on interstate flights, within the borders of a state, can be readily made in the manner prescribed by the statute is shown by the claim of the plaintiff for a refund, made by the method prescribed. This added provision of measurement would not be necessary if the 1940 Act only reached intrastate commerce, as did the 1938 Act, which included no such provision.

"To adopt the view of the plaintiff would be to say that the amendment of the 1938 Act, by the 1940 Act, made no change in the 1938 Act and that the latter Act was wholly ineffective and futile."

Claims 'Use' Tax

The airline had contended that the tax is not on sale, purchase, storage or withdrawal of gasoline used or consumed in interstate commerce but is a "use" tax which directly burdens commerce.

"The flaw in plaintiff's contention," said the court, "is the assumption that the tax is a 'use' tax. The statute does not levy a tax for the 'use' of gasoline in the propulsion of airplanes. No such construction has been placed upon it so far as we are advised by State officials charged with its enforcement . . . No tax is paid in Virginia upon gasoline purchased outside of Virginia, although such gasoline may be used in flights in or over this State. If the tax was upon the 'use' of gasoline, it would be immaterial where the gasoline was purchased for computing the tax . . .

"We are not greatly concerned with the name by which the tax is called. It is the effect of the tax that is material . . .

"We are unable to agree with the plaintiff that the imposition of the tax discriminates against it in carrying out its operations as an instrument of interstate commerce, or that it creates such a burden as amounts to regulation. Every tax is, to some extent, a burden upon the subject to which it affixes itself. The test is not whether it is a burden, but whether it is discriminatory or regulatory."

"Measured by that test," the court added, "we find no discrimination, actual or potential, against the operations of the plaintiff or any burden in the nature of a regulation. It is subject only to the same tax which the State imposes upon intrastate commerce."

In at least four similar cases carried to the United States Supreme Court, the levying of state gasoline taxes was upheld, in recent years.

In an action brought by Eastern Air Transport, Inc., against the South Carolina Tax Commission, a state tax on intrastate sales of gasoline was held not unconstitutional, although the gasoline is to be used by airplanes flying in interstate commerce. The "mere purchase . . . supplies or equipment for use . . . conducting a business which constitutes interstate commerce is . . . so identified with that of commerce as to make the sale immune from nondiscriminatory tax imposed . . . the State upon intrastate dealers," the Court held.

When the state of Wyoming sought to repeal a lower court decision in favor of Boeing Air Transport, Inc., the U. S. Supreme Court ruled that where gasoline has been imported into a state and stored at an airport, although it is to be used in filling the tanks of aircraft traveling in interstate commerce, nevertheless such withdrawal from storage may be subject to state gasoline tax. The court said: "A State may validly tax the 'use' to which gasoline is put in withdrawing it from storage within the State, and using it in tanks of the planes, notwithstanding that its ultimate function is to generate motive power for carrying on interstate commerce."

A similar Tennessee law was upheld by the Supreme Court in a case brought by the Nashville, Chattanooga & St. Louis Railway and which is frequently cited in airline litigation. The court ruled that the levy of a State tax on gasoline purchased in a foreign state by an interstate rail carrier and stored by it in the taxing state for future use in its interstate railway operations is constitutional.

Other Cases

Other gasoline tax cases, briefly reviewed, include:

Alabama: An opinion by the attorney general held that a local oil company is required to pay the state gasoline tax on gasoline regularly sold to "airships" for their own use in interstate commerce. "When gasoline is imported and comes to rest within the state and is withdrawn from storage, it has passed out of interstate commerce and is subject to the gasoline tax. The fact that it is afterwards sold to airships for their own use while engaged in interstate commerce does not violate the commerce clause of the Federal Constitution."

Florida: Opinion by the attorney general maintained the fact that an airplane is engaged in interstate commerce almost entirely, or even entirely, does not exempt it from the payment of the gasoline sales tax of six cents per gallon on the sales of gasoline made in Florida, even though it would exempt gasoline used by such airplanes from the operation of Chapter 13756, Laws of 1929, which prescribes a gasoline tax upon gasoline stored in Florida for use in Florida.

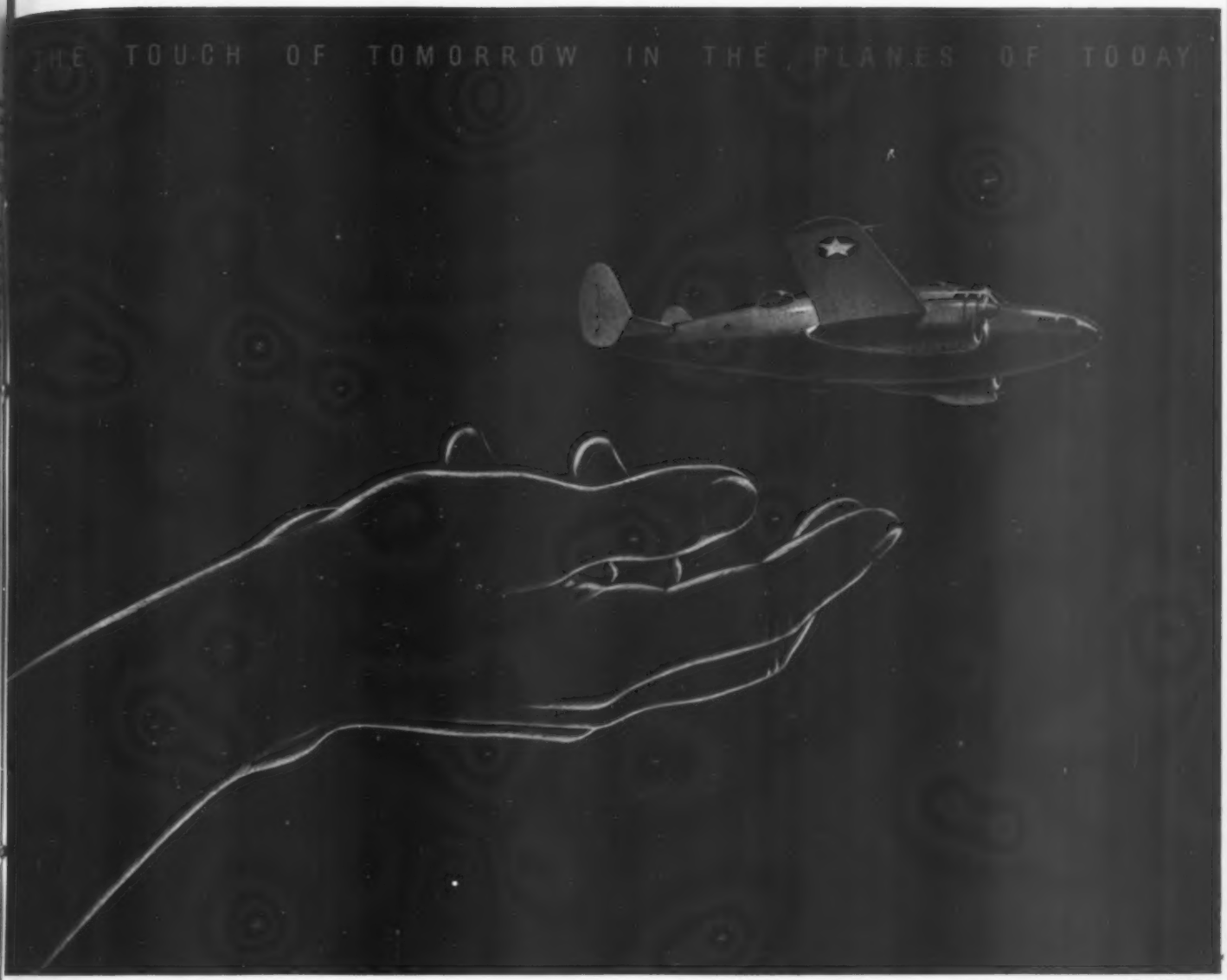
Idaho: State law requires each dealer engaged in the sale of motor fuels to pay the tax. Varney Air Lines, Inc., brought action to restrain the state from collecting taxes on gasoline it bought outside the state and used within the state in its airplanes, on the grounds it contravened the commerce clause and that Varney did not sell gasoline. The U. S. District Court of Idaho held that the state can tax gasoline within the state but that the plaintiff did not "sell" gasoline; and that the state can tax gasoline used in airplanes where the state furnishes aviation facilities and such tax does not violate the commerce clause.

Indiana: Attorney general held that Curtiss-Wright Flying Service was entitled to refund of tax on gasoline used in its own planes, but could not claim refund on gasoline sold by it for use in other planes.

Louisiana: American Airways, Inc.,

(Turn to page 43)

Chick Delivery: Pan American Airways' flight steward Barney Sawicki and hatchery expert John Perry tuck 100 baby chicks into their excelsior bed for transportation via Clipper from the U. S. to Honolulu.



Fairchild AT-14

Fairchild Perfects a Plane to Speed Advanced Training

The new Fairchild AT-14, a twin-engine advanced trainer designed for quick production from non-strategic materials, is a product of Fairchild engineering versatility—a versatility gained through extensive aeronautical research and the application of experience to the creation of airplanes for specific missions in this war.

The AT-14 is of Fairchild Duramold plastic-bonded plywood construction throughout. It is the first trainer of its type with tricycle landing gear. It accommodates pilot, co-pilot, bombardier, navigator-radio operator and gunner and contains all instruments required under all conditions of a long range bombing attack. It is powered by two Fairchild Ranger Twelve air-cooled, in-line inverted engines. In every phase of its design and construction it bears the unmistakable Fairchild "Touch of Tomorrow."

"ON THE BEAM"

"The dominant note of our common war effort is unity, unity of our people and unity of the United Nations. That is the hard fact which is the spearhead of Victory."
Franklin D. Roosevelt
(From letter dated November 25, 1942 to Colonel J. C. O'Laughlin)

Coming Fairchild achievements in implementing our war in the air will further reflect Fairchild's engineering versatility in *creating the plane for the purpose.* They, too, will bear "The Touch of Tomorrow"—for the advancement of aeronautical science and for a more certain Victory in the air.

Fairchild Aircraft *Division of Fairchild Engine and Airplane Corporation, Hagerstown, Md.*

Lea Forecasts Air Bill Action About Mid-April

The omnibus Lea bill—contemplated as "The Civil Aeronautics Act of 1943"—will probably be brought up for House action "around the middle of April" with Interstate and Foreign Commerce Committee offering one fundamental amendment at that time, Rep. Clarence F. Lea (D., Cal.), chairman of the committee and author of the bill, forecast in an interview with *American Aviation*.

The amendment would write the provisions of the President's Reorganization Plan of 1940, establishing the present organization of the Civil Aeronautics Authority, into the bill.

"This would abolish the Plan, and result in government by an act of Congress rather than by Presidential directive," Lea pointed out.

In writing the amendment, the committee will also aim "to clarify some uncertainties, such as the demarcation of duties between the Civil Aeronautics Board and Administration, existent under the Reorganization order," he added.

Lea and other Congressional aviation leaders have questioned the wisdom of the President's order, particularly the abolition of the independent Safety Board.

Interstate and Foreign Commerce, in framing an organizational provision for the Lea bill, was faced with two alternatives: (1) patterning the legislation in line with the President's order, or (2) overriding the Reorganization order and reverting back to the organizational set-up provided in the Civil Aeronautics Act of 1938. Lea's decision which appears to carry with the committee is to pursue the first course.

His hesitancy about the decision, however, is indicated in his remarks during the early stages of the bill's consideration.

Aside from the organizational amendment, "no changes of great importance" will be offered by the committee," Lea predicted. "We like to present the House with a clean piece of legislation, however, so it may well be that we will offer a re-drafted bill," he added.

Other members have indicated that the committee would offer a greatly revised substitute as a result of extensive hearings held after the bill was reported out of committee.

"We will have many additions and subtractions to suggest to the House," Rep. Lyle Boren (D., Okla.) remarked.

The bill was reported out on Feb. 11, but hearings were re-opened shortly after the defeat on Mar. 2 of the Nichols resolution which would have transferred jurisdiction of commercial aviation to a new committee.

Advocates of "State's rights" have aired staunch opposition to the extension of Federal control over commercial aviation provided by the bill and a fight over State versus Federal control is expected on the House floor. Endorsement of the policy of Federal control over all aircraft operating in airspace over any state, however, has been given by L. Welch Pogue, chairman of the CAB, William A. M. Burden, Special Aviation Assistant to the Secretary of Commerce, Col. Edgar S. Gorrell, President of the Air Transport Association, and other important aviation witnesses.

United Asks CAB Approval To Control Mexican Airline

United Air Lines on Mar. 17 asked the Civil Aeronautics Board to approve the purchase of 75% of the capital stock of Lineas Aereas Mineras, which operates 1,700 route miles in Mexico.

The company told the Board that its recent loan to LAMSA had given it an option to acquire controlling interest.

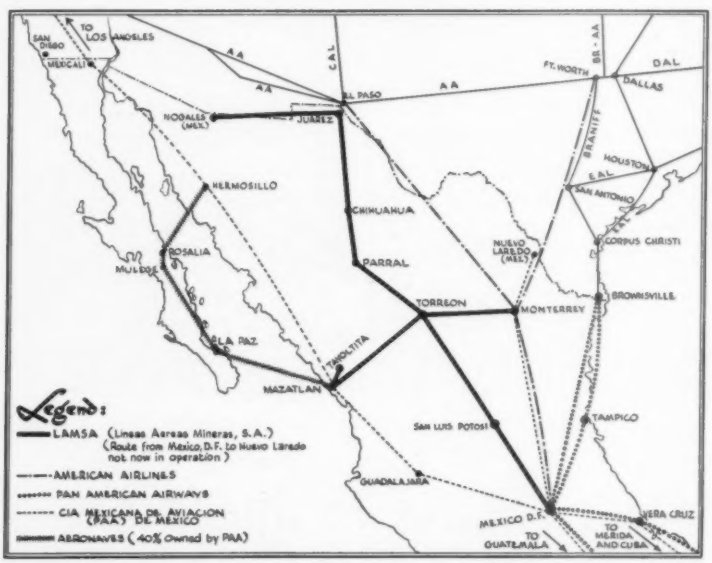
LAMSA maintains scheduled passenger and cargo service from Nogales and Juarez on the Mexican-U. S. boundary to Mexico City, and from Torreon to Mazatlan. Another route from San Luis Potosi to Nuevo Laredo is not at present being operated.

How United intends ultimately to tie LAMSA into its U. S. system was seen when it was revealed that the latter company has been granted permission to operate between Nogales and Juarez. Nogales is approximately 370 miles from San Diego and 480 miles from Los Angeles, both of which are served by United.

"While ultimately it may be possible to establish an air link from LAMSA's northwestern terminal at Nogales to United's west coast route extending from San Diego to Vancouver, our present objective is to assist the operators of LAMSA to obtain improved ground and flight equipment," W. A. Patterson, UAL president, explained.

"The Mexican company was founded in 1931 by Gordon Barry, an American flyer, who has operated it continuously since that time. It is United's intention to leave the operating management of LAMSA in the hands of those people who developed it, and to expand the company around its own leaders."

If CAB approves the application, United will immediately undertake construction of modern plant and maintenance facilities for its subsidiary at Mexico City, Patterson said. Improvements in flying and ground equipment will also be sought.



Map Shows 1,700-Mile System Which UAL Would Control

NORTHWEST AIRLINES, Inc., in February, 1943, carried 4,741 revenue passengers, compared with 4,026 in January, and operated 2,990,167 revenue passenger miles, contrasted with 2,612,999. And in February, 1943, NWA hauled 100,119 lbs. of air express, compared with 56,931 lbs. in the same month of 1942, operating 69,612,577 express pound miles against 40,590,308.

UNITED AIR LINES, despite a 13% decrease in revenue airplane miles flown in February, reports 22,274,800 revenue passenger miles, up 36% from the 16,377,368 in February, 1942. Revenue airplane miles in the 1943 month totaled 1,578,340, against 1,816,174 a year earlier. Express pound miles in February, 1943 totaled 540,738,000, 31% more than the 413,932,147 reported in February, 1942. Mail pound miles amounted to 1,455,509,000, contrasted with 759,853,871, a 92% increase.

PAN AMERICAN AIRWAYS, eastern division, carried 123,717 passengers in Latin American service during 1942, opposed to 111,066 in 1941. Division recorded 8,968,031 miles of flight in the '42 year, compared with 5,816,163 in the previous year, a 54% increase. Foreign air mail in and out of Miami amounted to 2,178,791 lbs. in 1942 which was a 195% increase during 1942. An expansion of 650% was experienced in air cargo cleared through Miami.

C & S Advertising Cut Protested

A storm of protest burst around the ears of the Civil Aeronautics Board last fortnight over the Board's action in telling Chicago & Southern Air Lines to reduce its advertising and publicity expenses from $110,000 to $40,000 yearly.

In ordering the company to show cause why its air mail pay should not be set at .3 mill per pound-mile the Board claimed that "in view of the limited capacity available for passengers, it appears to be unnecessary to continue advertising and publicity expenses at previous levels . . ."

This action brought a strongly worded wire to CAB from the Advertising Club of Los Angeles which stated that although it has no direct concern with C&S, "we feel strongly that the principles are such that we cannot refrain from a protest if the facts are as reported.

"We believe that your concern should be with the fairness of the price paid for services rendered to the government or the Post Office Dept., with the facilities the company has for such service, and with the safety and efficiency with which it carries out its part of any contracts or agreements; but that the matter of how much money should be spent for advertising other services of an entirely different nature should have no more bearing on those points than the color of the company's planes . . . We . . . feel strong that it is setting a disastrous precedent when any government body dictates to the management of a company how its money should be spent or not spent."

In an editorial, the *Chicago Journal of Commerce* asserted that "the CAB ought to be brought up sharp in this magisterial attempt to throw its weight around."

The CAB, the newspaper said, "now sets itself up as the judge and jury of airlines' advertising campaigns, and should that power go unchallenged, this Federal agency probably will pass on next to the quality of the advertising copy put out by the airlines, and whether the advertisements have the correct or incorrect amount of feminine pulchritude pictured thereon, and other related matters . . .

"This is the inevitable tendency of all Federal agencies: to demand vast and indefinite privileges and prerogatives, to attempt to exercise them and if successful, to go on to broader domains. In this particular case, the CAB feels qualified to pass on matters which, one might suppose, only the executives of this airline are competent to decide."

Ralph S. Damon, president of Republic Aviation Corp., in a New York speech (see story elsewhere) discussed the C&S case with the comment that "in other words, the Board, instead of remembering the words of the Act which created it to 'foster and develop,' is endeavoring to become the mother-in-law to determine how many handkerchiefs you put in your pocket every morning."

Tunisian Take-off

A "Marauder" gets away on AEROLS*

Far superior to similar Axis planes, Martin's B-26 bomber, called the "Marauder," has established an enviable record in the North Africa campaign.

Equipped with Aerols, the "Marauder" takes off and lands readily on the unfavorable terrain of Tunisia.

In today's global war, Aerols are also serving on every other front, on every type of plane. From the steppes of Russia to emergency fields in the South Sea Islands, Aerols are contributing to the achievements of American aircraft.

THE CLEVELAND PNEUMATIC TOOL COMPANY
AIRCRAFT DIVISION • • **CLEVELAND, OHIO**

Also Manufacturers of **Cleco pneumatic tools for the aircraft and general industry, Cleco sheetholders, Cle-Air shock absorbers for trucks and buses, and Cleveland rock drills for mining and construction work.**

AEROLS*

*THE SHOCK ABSORBING UNITS ON AN AIRPLANE'S LANDING GEAR; THE NAME IS DERIVED FROM THE WORDS "AIR" AND "OIL" — THE FLUIDS USED TO DISSIPATE THE LANDING SHOCKS

RELAYS BY GUARDIAN MEET ALL CONTROL NEEDS

★ **Whether the principle is electronic or magnetic . . . whether the job requires a tiny A.C. relay or a heavy-duty D.C. solenoid . . . whether time delay or instantaneous action . . . there is usually a "Relay by Guardian" to meet the "specs" on most applications . . . from animated electric signs to electric chokes for the Army's amphibious tractors.**

LIGHTWEIGHT AIRCRAFT CONTACTORS...

The SC-25 and SC-45 lightweight contactors have double wound coils drawing 2 amperes to close the contacts vigorously. The current is then reduced to .180 amperes which is sufficient to keep the contacts firmly closed. These new contactors are interchangeable with earlier types B-4, B-6A and B-7A. Another new contactor is the B-8 which is interchangeable with the B-4 on intermittent duty applications. The B-8 handles inrush currents up to 1500 amperes. Contacts close firmly at 6 volts. All of these units are built to U.S. Army Air Force specifications.

B-8 Solenoid Contactor

Write for Bulletin SC-25, SC-45 and B-8.

GUARDIAN ELECTRIC

1608-D WEST WALNUT STREET CHICAGO, ILLINOIS

A COMPLETE LINE OF RELAYS SERVING AMERICAN WAR INDUSTRY

State Taxes

(Continued from page 38)

imported gasoline in tank car lots from Texas and complained that the Louisiana statute which levies a tax on gasoline "sold, used or consumed in the State of Louisiana for domestic consumption," is a tax on the privilege of engaging in interstate commerce. The U. S. Supreme Court held that the tax is upon the privilege of selling, using or consuming gasoline. "The stored gasoline is deemed to be 'used' within the State and therefore subject to the tax when it is withdrawn from the tanks."

Michigan: In an issue raised by Ford Motor Co. in connection with daily plane flights Detroit-to-Buffalo, the attorney general held that the gasoline tax "is not applicable in the instance of gasoline consumed by airplanes used exclusively in interstate commerce. However, where airplanes make use of public airports a tax may be imposed upon gasoline consumed by such airplanes making such use, notwithstanding their engagement in interstate commerce. Airports bear the same relationship to airplanes as do highways to automobiles, hence there is no infringement of the Federal commerce clause in the imposition of a gasoline tax as a privilege fee for the use of public airports."

New Mexico

New Mexico: In one airline case the U. S. District Court for New Mexico held that since the gasoline tax could not be apportioned between its interstate and its intrastate business, the tax was inapplicable. Subsequently in a case brought by Transcontinental & Western Air, Inc., the New Mexico Supreme Court held that "the excise on the use of gasoline offends the commerce clause of the Federal constitution and cannot be enforced in the case of one purchasing gasoline in another state and using it in this state as fuel to propel aircraft in interstate commerce" but that a gasoline tax on sales made in New Mexico was not in violation of the commerce clause.

Oklahoma: The U. S. District Court granted an injunction to United States Airways, Inc., to prevent collection of gasoline taxes where interstate and intrastate operations were so commingled that the tax could not be apportioned.

Tennessee: In an American Airways, Inc., case the U. S. Supreme Court held that the Tennessee statute "does not impose a property tax upon the gasoline, but it imposes an 'excise' or 'privilege' tax upon the business of storing and withdrawing the gasoline and the amount is computed upon withdrawals. The storage and withdrawal, being completed in Tennessee, is an intrastate transaction, and not a transaction in interstate commerce. It is a business subject to a 'privilege' or 'excise' tax."

Utah

Utah: The State District Court entered a decree enjoining state officials from collecting a gasoline tax upon gasoline used by planes in interstate commerce, though accounting must be made and tax paid upon all gasoline used in intrastate commerce.

Nebraska: The attorney general recently issued an opinion that operators of training schools under the CAA pilot training program were entitled to reimbursement of the amount of the tax paid on gasoline. He also held that "cost plus" contractors with the Federal government are not exempt from the state tax on aviation gasoline used in aircraft ground-testing and flight-testing operations and used to fuel completed planes for delivery to the Federal government at a designated spot, in accordance with the terms of the contract providing for reimbursement for the cost of such fuel.

Northeast Seeks 22,866-Mile Trans-Atlantic Air System

Assuring itself of a prominent position in the expected post-war scramble of over-ocean air routes, Northeast Airlines on Mar. 17 filed application with the Civil Aeronautics Board for a 22,866-mile network from Boston to London, Paris, Moscow, Stockholm and other European points.

Northeast now holds two records: (1) it is the first domestic airline to seek an extensive foreign air network, and (2) it has the oldest application now on file with CAB on which no action has been taken—Boston to New York, filed Nov. 12, 1938.

Routes asked by Northeast include: (1) Boston to London and Paris, (2) Boston to London and Paris via the Azores, and beyond London to Amsterdam, Copenhagen, Stockholm, Leningrad and Moscow, (3) Boston-Newfoundland-Glasgow-London, (4) Boston-Newfoundland-Reykjavik-Faroe Islands-Glasgow-London, and Boston-Reykjavik-Faroe Islands-Oslo-Stockholm-Leningrad-Moscow, with a branch line from Oslo to Copenhagen and Prague.

In support of its application, Northeast stated that it now has sufficient trained personnel to conduct the operations and has had the experience in operating similar services. The company added that it has already performed the pioneering work necessary to conduct the operations, inasmuch as it was one of the first to operate a regularly scheduled air cargo service across the Atlantic.

Large planes suitable for extensive over-water flights would be used, Northeast said, adding that it will furnish all necessary data when hearing is held on the application.

"In practical terms," the company said, "the proposed route from Boston to Moscow would permit traveling the distance of approximately 5,000 miles in a period of 18 hours and at a probable cost no greater than that of a third-class trans-Atlantic steamship fare. London would be reached from Boston in 14 hours; Paris and Amsterdam in an additional hour."

Northeast's application followed by two weeks the address of enterprising President Samuel J. Solomon before the Boston Advertising Club, in which he said that "the actual experience we have had since January, 1942 in connection with the war effort convinces us that these (North Atlantic) routes will be practical, easy to fly and productive of great benefit to the foreign commerce of the United States."

Big Plans: Northeast Airlines' proposed 22,866-mile trans-Atlantic air network is studied here by H. Anderson, vice president and chief operating officer; S. J. Solomon, president, and Robert S. Swain, vice president-treasurer.

Northeast's Proposed Routes

New Nylon Tire

United States Rubber Co., New York, N. Y., has announced a new nylon airplane tire, which it claims is "actually more than twice as strong as any made from rayon or cotton fabric." The tire has been developed to withstand the heavier loads of latest plane models, and is already in use in battle areas.

February Accidents

Safety Bureau of Civil Aeronautics Board reports nine fatal accidents in non-scheduled flying during February, and two such accidents in regular scheduled operations. Investigation was completed on six non-scheduled accidents and on both of the scheduled mishaps.

Col. T. O. Hardin Is Awarded DFC

Col. Thomas O. Hardin, well known in the air transport industry, has been awarded the Distinguished Flying Cross "for pioneering air transport and combat air support operations in Africa and the Middle East," the War Dept. announced Mar. 18.

Before entering the Army, Col. Hardin was president of Southwest Feeder Airlines, assuming that position after serving as vice president-safety for TWA. He was also a member of the CAA's independent Air Safety Board.

"When his organization was established (Col. Hardin is operations officer of the Africa-Middle East Wing of the Air Transport Command) he surveyed a number of new air routes so that personnel and equipment could be speeded to this theater of operations," the citation said. "Col. Hardin was the pilot of the first American transport plane to land at Touggourt, Biskra, Atar, Tindouf, Marrakech, Adjouf, Dakar, and Columb-Bechar.

"During the Royal Air Forces operations against the German Army in Africa, Col. Hardin transported vitally-needed gasoline by air to the Allied front line bases. He also served as a pilot in Algiers, Tunisia, and in Moroccan combat areas surveying fields and airdromes for air support operation. Many of these flights were made in the face of possible enemy interception, over dangerous terrain and with virtually no navigation aids.

"The unflagging devotion to duty and disregard of personal danger exhibited by Col. Hardin during these missions reflect the highest credit on himself and the Army Air Forces."

Traffic

AMERICAN AIRLINES has announced 1,678,198 lbs. of air mail flown in January, 1943 contrasted with 945,526 in January, 1942. Pound miles amounted to 1,048,103,258, against 572,177,077. Air express transported in January, 1943 totaled 1,224,196 lbs., 80.39% over the 678,643 lbs. in the '42 month. Pound miles of express flown were 626,229,905, opposed to 338,659,279, an increase of 84.91%. Traffic to Canada increased 145.22% over January, 1942.

CANADIAN civil air lines, during November, 1942, carried 16,720 revenue passengers, compared with 19,530 in October and 11,202 in November, 1941. Freight hauled declined to 310,521 lbs. from 1,262,078 in October and 460,364 in November, 1941. But mail increased to 499,515 lbs. from 470,028 lbs. in October and 243,002 lbs. in November, 1941.

AMERICAN AIRLINES, Inc., flew 1,332,602 lbs. of air express in February, 1943, against 628,804 in February, 1942, a gain of 111.9%, and performed 677,220,830 pound miles in the '42 month, contrasted with 330,257,601 in the previous year, a gain of 105%. Likewise, air mail pounds in February, 1943 were 1,748,011, against 935,009 a year previously, or a gain of 87%, and air mail pound miles were 1,104,474,262, against 581,534,050, or a gain of 89.9%.

Airline Personnel

Robinson Wilson Courtney Harling

In the Services

Maj. Frederick R. Crawford, executive vice president and a director of Pennsylvania-Central, is stationed at Atlanta with the Plans and Special Projects Section of the Third Air Service Area Command.

Robert Post, chief passenger agent for TWA at Lockheed Air Terminal, Burbank, Cal., is now an army air cadet at Corpus Christi.

Peggy Collins and **Connie Peterson,** formerly counselaires for Western, have enlisted in the WAVES and SPARS, respectively.

Sales and Traffic

R. C. F. Baer, former United eastern superintendent of reservations at Chicago, has been named superintendent of reservations service for the company's entire system, succeeding **John P. Cisler,** who has been transferred to the company's work analysis department. **H. K. Cary,** formerly district superintendent of reservations service at San Fancisco, becomes eastern superintendent of reservations service at Chicago. **C. C. Robinson,** formerly district superintendent of passenger service at San Francisco, has been named western superintendent of station service at San Francisco.

Trans-Canada has announced the following traffic department changes: **Gordon R. Wilson,** who was city traffic manager at Montreal, has gone to Winnipeg as chief clerk, specializing in rate and tariff work. **Herbert D. Harling,** formerly city traffic manager at Toronto, is now district traffic manager, Winnipeg. **W. G. Courtney,** former Vancouver ctm, is now dtm at Toronto. He is succeeded in Vancouver by **John J. Robinson,** from Toronto. **J. F. Burritt,** Winnipeg traffic representative, has been transferred to Toronto in the same capacity. **R. E. Deyman,** Windsor ctm, is now assistant dtm at Toronto. **S. L. Blowes,** Toronto traffic representative, has been named traffic representative in charge, Windsor.

Seale Fuller, formerly of Continental's Albuquerque station, has been promoted to district traffic manager at Wichita. **Paul F. Sullivan** has been transferred from Denver reservations to the Albuquerque field office. **E. E. Pennington,** formerly of Hutchison, is being sent to Wichita as supervisor of passenger service. **William Cormack** has taken over as station traffic manager at Denver.

Mickey Hogarth, senior woman employe in United's reservations department, has been transferred to Seattle.

Operations

Emerson Woodward has been named personnel coordinator in Northwest's operations department.

H. A. Dugan has been promoted to director of Pennsylvania-Central's basic training school at Roanoke.

Henderson Baer Charleville Cole

United Plans for Post-War, Says Annual Report

Despite a 16% decrease in revenue airplane miles flown, revenue passenger miles flown increased almost 7%, mail-ton miles increased 83% and express ton-miles increased 126% over 1941, United Air Lines discloses in reporting net earnings of $3,134,356 for 1942.

These earnings, realized from operating revenues of $23,593,595, are equal to $2.08 a share, and compare with earnings of $598,050, or 40c, on operating revenues of $18,967,994 in 1941.

"Improved airline maintenance, the elimination of long non-stop flights, the temporary suspension of certain stops and sections of routes, and the discontinuance of sleeper plane service for the duration have contributed to United's high utilization of its present fleet of Douglas Mainliners," company explains.

The 1942 operating revenues included passenger revenues of $15,198,087, mail revenues of $5,655,775, express revenues of $2,139,266, commercial revenue of the company's Boeing School of Aeronautics of $99,473, and other net revenues of $500,991. Operating expenses and taxes totaled $20,576,309, against $18,403,246 in 1941. Taxes alone amounted to $3,206,311.

Balance carried to earned surplus was $2,134,356, and report explained that in 1942 United set aside $1,000,000 as a reserve for post-war contingencies. Net working capital at the end of the year totaled $7,699,618, an improvement over [illegible] $5,829,868 at the end of 1941. P[illegible] ceeds from sale of aircraft dur[illegible] 1942, amounting to $2,675,000, h[illegible] been earmarked for replacem[illegible] purposes, when new equipment [illegible] again available.

Direct contract work for [illegible] Army, principally on a cost-pl[illegible] a-fixed fee basis, produced a pr[illegible] after Federal taxes of only $115,[illegible] of 1942's net income, report emp[illegible] sized, explaining that fees rece[illegible] under Army contracts, before [illegible] come taxes, were 5.24% of the c[illegible] of work performed.

At the end of 1942, there we[illegible] approximately 6,000 United e[illegible] ployes, report disclosed, contra[illegible] with about 4,000 a year earlier. [illegible] the 6,000, "29% were women."

Prospects for post-war expans[illegible] are receiving proper attention, W. [illegible] Patterson, United's president, s[illegible] commenting that "a research depart[illegible] ment is studying all aspects of th[illegible] picture . . . The sheer advance[illegible] ment of the art of manufacturi[illegible] and flying planes will give a[illegible] transportation a tremendous stimu[illegible] lus. The substantial pre-w[illegible] growth of domestic air travel shou[illegible] be greatly accelerated in the post[illegible] war period . . . The airplane [illegible] the future will be more economica[illegible] and more satisfactory to operat[illegible] New devices adding to safety, ne[illegible] acceptance of air transportation, ne[illegible] speeds of flight and new economie[illegible] of operation are on the horizon . . .

Air Cargo, Inc., organized by th[illegible] four major carriers, of which United [illegible] Air Lines is one, has made progress [illegible] during the year in its studies of the [illegible] problems related to shipping by [illegible] air. These include, among others, [illegible] questions of rates, types of aircraft, [illegible] ground service and facilities, and [illegible] promotional methods."

George Hogan, Philip Harmon, J. W. Stanford and **Luther Reed** have been named cargo captains by Braniff. **Robert O. Spencer, Carl Rowland** and **R. R. Ross** are now co-pilots.

Paul Henderson, Jr., formerly of United's Chicago traffic office, has been transferred to Washington as area manager for the air cargo department. **Fred F. Dawson** has become area manager at San Francisco, succeeding his brother, **T. E. Dawson,** who has become manager of passenger service at Denver.

E. L. Heuvelhorst has been promoted by Pennsylvania-Central to station manager at Washington, and **James F. Miller** has been named station manager at Mobile.

Virgil H. Cooper, formerly located in Delta's Birmingham field ticket office, has been named station manager at Love Field, Dallas.

Among transfers in C&S's radio department are: **L. D. Freret,** chief radio operator at Jackson, to Memphis in charge of radio training division; **Joe Devoe,** senior radio operator at Memphis, to Jackson, replacing Freret; **W. S. Morton,** senior radio operator at Memphis, to the military transport division.

H. K. Cummins has been promoted from junior airport manager to airport manager at Brownsville by Pan American.

The following junior airport managers have been transferred by PAA: **Duke C. Banks,** from Barcelona to La Guaira: **Dillon H. McDaniel,** from La Guaira to San Jose; **Charles H. Wright,** from Brownsville to Balboa. Airport managers transferred include **E. E. Vidaurri** from Managua to David, and **Louis Kowalski** from David to Managua.

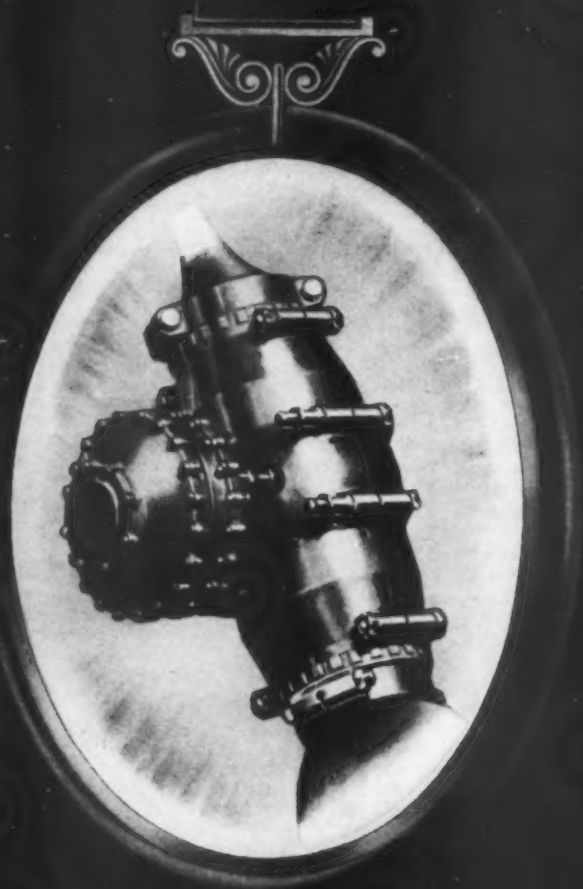
Miscellaneous

J. W. Charleville, prominent Southern California business man, has been appointed assistant to the president of Western.

Gordon H. Olinger, who has been station traffic manager for Continental at Denver, has been named personnel manager for the company.

Percy T. Cole has been appointed executive assistant of Canadian Pacific Air Lines.

Hugh Whitney Morrison, formerly director of public affairs broadcasts for the Canadian Broadcasting Corp., has joined British West Indian Airways as assistant to President **Lowell Yerex.**



External Cylinder CIRCA 1928
HELE-SHAW BEACHAM

External Cylinder CIRCA 1942
ROTOL

The direct Descendant

OF THE HELE-SHAW BEACHAM

The
"Double-Acting Ram"

FEATURED THROUGHOUT
THE COMPLETE RANGE OF

ROTOL

VARIABLE PITCH · HYDRAULIC
PROPELLERS

PARENT COMPANIES
ROLLS-ROYCE LIMITED ··· BRISTOL AEROPLANE CO., LTI

Dallas and Ft. Worth Fight the 2nd Battle of Midway

The Battle of Midway in the Pacific was small potatoes compared to the Battle of Midway involving the cities of Ft. Worth and Dallas, the opening guns of which were fired in Washington last fortnight.

It seems that an airport, known as Midway, is being constructed half way between the two cities, which are 30-odd miles apart, with the hope that the airlines ultimately will be able to serve both cities through said airport.

Everything was fine and dandy until the Dallas citizenry discovered that the administration building is to be located on the west side of the field, favoring Ft. Worth (they say).

So up to Washington came delegations from both cities and from Arlington, Tex., which sponsored the project but which seems to be an innocent bystander. They eloquently placed their cases before Secretary of Commerce Jesse Jones (a Texan) and CAA Administrator Charles I. Stanton.

One group wants to know why the building can't be placed on the "neutral" north side of the field, adjacent to Highway 183. Another group claims that the west side is the logical side because of the runway pattern. And so on.

A CAA official claimed that the building will be actually almost exactly midway between the two cities, but that Dallas customers will be forced to ride all the way around the airport to get to it.

Anyway, CAA has the matter under consideration. The building isn't built yet and probably won't be until after the war.

So the casualties of the Battle of Midway should be light, at least for a while.

Actions of the Civil Aeronautics Board

Order No. 2154, *Feb.* 15, 1943: Revoked commercial pilot certificate No. 18597, held by Alton S. Fell, for allegedly piloting "aircraft in a careless and dangerous manner and (for teaching) improper flight maneuvers."

Order No. 2155, *Feb.* 18, 1943: Permitted Rickliffe M. Decker, holder of private pilot certificate No. 54112, to take up to and including Feb. 26, 1943 in which to file an answer to amended complaint.

Order No. 2167, *March* 2, 1943: Revoked student pilot certificate No. 301412, held by Samuel P. Hudgins, for several alleged violations of the Civil Air Regulations.

Order No. 2168, *March* 2, 1943: Restricted private pilot certificate No. 61334, held by Kenneth D. Johnson, for six months, so that he may "pilot civil aircraft only while receiving instruction in the War Training Service, while making check flights . . . or while on military duty," for several alleged infractions of the Civil Air Regulations.

Order No. 2170, *March* 4, 1943: Approved amendment of CAB Contract No. 187, agreement between a group of airlines regarding local and joint passenger tariff, as described in Order No. 1305, issued Oct. 10, 1941.

Order No. 2171, *March* 5, 1943: Approved the holding by Thomas W. Bowers of positions as director in both American Export Airlines, Inc., and American Export Lines, Inc.

Order No. 2174, *March* 8, 1943: Rescinded authorization of temporary suspension of service on Delta Air Lines, route 24, to and from Monroe, La., which was originally expressed in Order No. 1773, dated May 30, 1942.

Order No. 2175, *March* 8, 1943: Consolidated applications of Pan American Airways for amendment of its certificate in connection with its Latin American and Caribbean services into one proceeding.

Order No. 2176, *March* 9, 1943: Authorized Eastern Air Lines, Inc., to serve Raleigh, N. C., effective March 15, 1943, through the use of the Raleigh-Durham airport, subject to any necessary amendments of EAL's certificate.

Order No. 2178, *March* 3, 1943: Denied request of Chicago and Southern Air Lines, Inc. for oral argument concerning compensation for transportation of mail and related services on C and S's routes 8 and 53.

Order No. 2179, *March* 3, 1943: Denied similar request from Braniff Airways, Inc., concerning mail transportation and related services on its routes 9, 15 and 50.

Order No. 2180, *March* 3, 1943: Likewise denied request of National Airlines, Inc., concerning its routes 31 and 39.

Order No. 2181, *March* 3, 1943: Similarly denied request of Delta Air Lines regarding its routes 24 and 54.

Order No. 2182, *March* 10, 1943: Directed that certain testimony and exhibits be withheld from publication until further notice in the case of All American Aviation, Inc.'s petition for mail transportation rate on its route 49.

Order No. 2185, *March* 8, 1943: Made amendment No. 5 to CAB Form 2380, Report of Financial and Operating Statistics for International Air Carriers.

Order No. 2188, *March* 12, 1943: Approved amended agreements (latest amendment Feb. 24, 1943) entered into originally on Dec. 31, 1935, between Braniff Airways, Inc., Inland Air Lines, Inc., Mid-Continent Airlines, Inc., Notheast Airlines, Inc., Trans-Canada Air Lines and Railway Express Agency, Inc.

Airline Commentary

We dropped in to see Dr. Edward P. Warner, vice chairman of the Civil Aeronautics Board, the other day . . . Knowing that he has been doing a great deal of thinking about post-war aviation, we asked for his opinions on this much-discussed subject . . . And, in 10 minutes, he gave us more facts, figures and predictions than it is ordinarily possible to get in 10 days—and he did it all without reference to notes . . . Considering everything, he said, the airlines shortly after the war will be performing between five and 10 billion passenger-miles yearly, compared to 1½ billion now . . . Cargo, he predicted, will range from 50 to 150 million ton-miles yearly, compared to 15 million now . . . Explaining the basis for his prediction on passengers, he pointed out that first-class rail travel in a normal year has been running about 10 billion passenger-miles, with another 15 billion in day coaches . . . Some of this rail travel will go into the air, but little if any of the 180 billion passenger-miles traveled yearly in private automobiles will be affected, he said . . . In addition, there will be newly-created business . . . For example, some persons now transacting business by telegram and telephone would probably sooner talk face to face if they could get together quickly enough and cheaply enough . . . Vacation travel and maybe some commutation travel will be by air . . . Air cargo rates, Dr. Warner said, will be at least somewhat higher than fast freight, proceeding on the assumption that the air cargo business will be self-sufficient . . . If the government foots any part of the bill, they will be lower . . . "That's about all I can tell you in 10 minutes," he said . . . What would we do if we gave him half an hour? . . .

●

The death of Lieut. William Du Bose Sheldon, USNR, was a great loss for the air transport industry . . . As an aviation attorney, Bill Sheldon was starting to make his mark . . . His work for the Air Transport Association was painstaking and thorough . . . He was liked by everyone who knew him . . . His death, following active service at Guadalcanal, can go on the books as a contribution of the air transport industry to the war effort . . .

●

Pat O'Malley is in the airline business again, this time with TWA . . . Anna Catherine Patricia Regina Mary O'Malley (no kidding, that's her full name) has lived aviation since 1925 . . . TWA's gain is the CAA's loss . . .

●

Pan American Airways has given several "off-the-record" luncheons recently for top-notch Washington newspapermen and columnists . . . The speakers have been PAA men returning from China and Australia . . . It's been a smart move by PAA and the newspaper gang eats up the inside dope direct from the fighting fronts . . .

●

The adoption of the 24 hour clock, as advocated recently by *American Aviation*, is being given serious consideration by some of the airline traffic and reservations men. . . . It is due to be discussed at an Air Traffic Conference schedules committee meeting in Chicago early in April. . . . Many airline men consider the 24 hour clock on schedules an inevitable, but won't hazard a guess as to when it can be put into full use domestically . . .

●

In these war days all airlines require their employes to have identification badges . . . In Washington, Pennsylvania-Central has inaugurated a system of assessing a small fine on each employe who comes to work without his badge . . . One day not so long ago, so the story goes, President C. Bedell Monro showed up without his . . . The guard was all set to let him in anyway, but Monro insisted on paying the fine . . .

●

Congratulations to Northeast Airlines on Vol. 1 No. 1 of its new house organ which, by the way, is called the "Gremlin." . . . Braniff is now printing a special overseas edition of its "B-Liner." . . . Printed on light paper stock, it is sent to former employes now in the armed services overseas. . . .

●

The following amusing item was gleaned from United Air Lines' house organ: "To an Army unbothered by the establishment of any new rank for many years, creation of the new civilian Air Transport Command with its one, two and three bars has brought puzzled confusion. The Army thinks the wearers of these new uniforms belong to the Navy, the Navy blames the Marines, and the Marines feel certain it all has something to do with the Army—so everybody's confused. Art Derby went into a cafe in full regalia and promptly put two crusading MP's into a state of the jitters. At last, unable to stand the strain longer, they approached Derby to ask respectfully, 'Pardon us, sir, but what in H--l does all this new insignia represent?' Oh well . . . at least the WAAC's salute us anyway" . . .

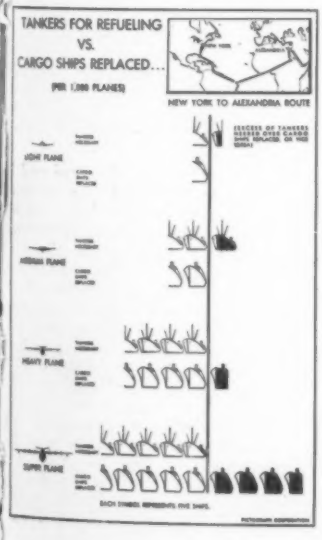
E. B.

Big Air Cargo Fleet Will Demand Refining Plant Expansion, S. O. Says

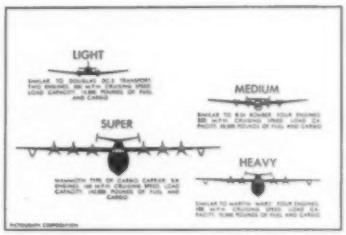
MOST cargo planes now in transoceanic service require more tankers to keep them in operation than they replace in freight ships, and if the petroleum industry is to supply the fuel and lubricants for greater fleets of air carriers it must have steel and other materials for expansion of 100-octane plant construction. These statements are made by Standard Oil Co. of New Jersey in a survey made by its technicians on supplying of gasoline and lubricants to air freighters. In general, a discouraging outlook is indicated for building up the U. S. cargo plane fleet.

"Even in wartime the most serious study must be given to the possibility of spotting 100-octane gasoline plants in Russia and within reasonable distance of the Middle Eastern oil fields of Iran and Iraq," it is said. "We (petroleum industry) are working against the clock . . . It takes at least six months to build 100-octane plants, even longer to fabricate and erect aviation oil facilities. Not only must we think of plane construction in terms of fuel, lubrication and other service requirements, but we should plan well in advance the expansion of facilities to meet these needs. Failure to do so may mean long lines of cargo carriers unable to get into the air for lack of gasoline and oil in their tanks."

Since aviation experts concede that the fuel supply and transportation problem is one of the major barriers to economical air cargo operations, Standard's survey had a



TYPES OF CARGO PLANE



better reception in non-aviation circles than among air enthusiasts.

"Air cargo carriers are here to stay. In coming years the aviation industry will undoubtedly perform feats beyond even its wartime achievements. In addition to cargo planes, gliders may be developed to carry express freight behind tractor planes; the technique for this has already been developed in connection with transporting troops . . .

'Priority Passenger'

"Yet neither the leviathans of the future nor the bombers, transports and cargo carriers of today, can fly without fuel. It is fuel that is the priority passenger on every flying freighter. Fuel and the extent to which it can be made available along the way, determines the routes. Fuel will dictate how much cargo may be carried. Fuel will help design the planes of the future, each suited to its particular trade.

"But in the meanwhile, enthralled by feats of globe-spanning transportation, is it possible that we run the danger of thinking of great military air fleets too much in terms of steel, aluminum and plant capacity and not enough in terms of the fuel to fly them? . . .

"In reviewing the picture it is important to remember that under present war conditions all supplies of aviation gasoline must be hauled overseas by tankers—for with the loss of the Netherlands East Indies there is little 100-octane refining capacity on the other side of the world. If one of the mammoth cargo planes we have been hearing about were to lift its 250,000 lbs. over San Francisco tomorrow and with its six engines beating steadily, head for Australia with enough fuel for the 16,000 mile round trip, the quantity of military supplies it could carry would be exactly nothing. If a 70 ton aerial freighter similar to the Mars, largest transport now in existence, were to load enough fuel for a 12,800 mile round trip to Egypt, it too would have to fly with empty cargo space.

"As for the medium type of carrier similar in performance to the B-24 bomber, the only route it could negotiate with enough fuel for the round trip would be the comparatively short 7700 mile New York-to-London run. And here again the crew would be taking her over just for the ride; with any considerable cargo the ship would not leave the ground.

"Of course, no one is attempting to fuel such flights for the full round trip—in fact, none of these planes has provision for such a fuel load. Cargo planes are actually delivering military supplies to far corners of the earth; they are able to do so because tankers are ferrying aviation gasoline and engine oil over four oceans to refueling stations that punctuate the routes of the flying freighters.

"But this raises another question—whether on some war routes cargo planes will not need as many tankers to haul fuel for them as they replace in ocean freighters . . . Aside from the heaviest type of carriers, of which only a few have been built so far, every cargo plane now in operation on overseas lanes requires more tankers to keep it in service than it replaces in freight ships.

"Present cargo planes operating on long overwater routes consume from one to four tons of fuel for every ton of cargo carried, even under the most efficient operating conditions. Most of that fuel, as we have already noted, has to be carried overseas by tankers . . . Like freighters, tankers carrying the planes' fuel are also vulnerable to torpedoes and shell fire.

270,000 Tons

"While exact figures are military secrets, it is possible from various published sources to gain a rough idea—at least for the purposes of estimating requirements of 100-octane gasoline, tankers and steel—of the number of cargo planes we may be able to put into the air through the next year or so. Not all the steel goes into planes. To construct and maintain in service a fleet of 1000 cargo planes of the heavy Mars type would require 270,000 tons of steel—but only a small part of it in the planes themselves. Requirements (assuming eight hours a day average operating time) are:

For 1000 planes and the manufacturing facilities to build them	50,000 tons
For additional manufacturing plants for 100-octane aviation fuel	120,000 tons
For new facilities for making aviation lubricants	20,000 tons
For tanker construction to transport aviation gasoline to refuel cargo planes	80,000 tons
Total	270,000 tons

"The same ton miles of transportation obtained from 1000 cargo planes under war conditions could be furnished by 20 cargo vessels with an expenditure of only 70,000 tons of steel . . .

"Except on short runs and with frequent refueling, you have to carry more fuel than cargo until you reach the heavy type of plane similar to the Mars.

"On the route from here to Alexandria, Egypt, the type of plane employed and the method of loading may make as much as an eight-fold difference in the weight of cargo that can be carried for each pound of fuel consumed.

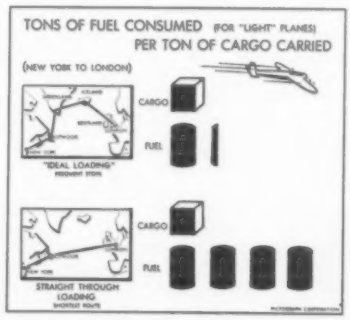
"Since the more frequently it is possible to stop and refuel, the more military supplies can be transported over a given route, the next question is how are these fuel supplies going to be laid down where they are needed in wartime.

"Some say by aerial tankers. But since such planes would have to carry their own fuel for the return journey they would, on most routes, have no room for extra gasoline to fuel the cargo planes. That brings us back to the lowly tanker and here are some of the conclusions that must be reached for wartime operation:

(1) For cargo planes now in use it is necessary to send more than a ton of fuel over the ocean in tankers for every ton of war materials carried through the air. (2) On long routes, to supply enough tankers to maintain in service the 1200 cargo planes called for in one contract recently awarded (assuming the heavy type of carrier), would require 20 new tankers. (3) The route permitting the greatest amount of cargo in relation to fuel consumed is the northernmost of the three laid out between New York and London. By making frequent stops for gasoline and thus cutting down the weight of fuel in the tanks, the maximum pay load can be carried.

"It is clear that the most efficient cargo planes on globe-girdling routes are the heavy and the super-classes. To maintain 1000 heavy-type flying freighters in service over the long routes to the fighting fronts would require a substantial increase in the country's 100-octane capacity, already under heavy demand from the military requirements of ourselves and our Allies.

"It is understood that the government plans to refit a number of bombers as cargo carriers. Every time a bomber is converted for cargo use it means an increase in its 100-octane fuel requirements. Not much is known about the type of military cargo planes now being built. Were they comparable in size to the Mars and assuming they would spend a third of the time in the air, this 1200 plane program alone would require about 3,300,000 gallons of 100-octane a day.



Statistics

AIR EXPRESS DIVISION, Railway Express Agency, discloses that in Dec. 1942 shipments "exceeded all previous monthly figures," at LaGuardia Field, N. Y. C. There were 60,368 shipments, which weighed 454,517 lbs., an 89% increase over Dec. 1941. Gross revenue was up 37.7% over the previous year. During all of 1942, LaGuardia's lines handled 598,197 shipments, 3.7% more than in 1941. These shipments totaled 3,900,000 lbs., a 64% increase over the previous year. Gross revenue for 1942 was 40% above 1941. Air express reports "average weight of air express shipments has doubled since a year ago, and individual shipments weighing 100 pounds or more are the rule rather than the exception."

TRANS-CANADA AIR LINES, in Jan. 1943, hauled 278,933 lbs. of mail, against 128,103 lbs. in Jan. 1942, 47,289 lbs of express, compared with 13,564 lbs., and carried 8,003 passengers against 5,811.

UNITED AIR LINES, Chicago, Ill., has announced a dividend of 50c a share, which was payable March 1 to stockholders of record Feb. 19.

Need for Design Simplicity Stressed

Breakdown Illustrations May Be Good Influence on Future Designs, Writer Suggests

By E. J. FOLEY

THE component-breakdown illustrations of complete aircraft that we're seeing these days in the trade journals may be a good influence on the future designs. In their necessarily restricted detail, these "put-it-together pictures" make the airplane look as simple as a Tinker Toy. We recommend that the manufacturers now try to reverse the flow and attain design simplicity and accessibility equal to that of the illustrations.

The maintenance staff of the airline operator ordinarily sees an aircraft in nearly as divided a condition as it is shown in these exploded drawings; whether it should be necessary for them so to see the craft is beside the point. They are accustomed to seeing any two separable pieces two or three feet apart. Were they sufficiently naive they might dreamily consider one of these illustrations and almost believe that things were as simple as they appeared. Unfortunately, they know that the engine-mount section isn't that easy to remove. They remember the 10 or more bolts that represent only a clue to the program. And of these bolts they recall the two that are head-hidden behind a portion of the nacelle.

Foley

We hear of cases daily where new designs fail to meet even the basic tests for a transportation vehicle. Yet, the need for expediency in military equipment production today is obviously the prime determining factor and so we are not critical in our comment but simply constructive for the future. There are several acknowledged differences between military and civil transport aviation which encourage and necessitate design disparity between the two.

'Dirty'

However, we are still wondering how many manufacturers are maintaining an advice-liaison that does now and will in the future assure their realization of operator problems and justifiable dissatisfaction. We've personally seen many cases where secondary design detail was so "dirty" as to appear almost intentional in its obstructionism.

As we've said before, it often looks as though the manufacturer either believed (a) that every detail was so perfect as to preclude the need for anyone to *see* it, let alone remove it, or (b) that on a contract that small he was going to lose money and he had fixed it so the operator would too.

Lest readers get the impression that *our* ultimate goal is to have a single lever which, depressed, exposes every vital part of the aircraft, we wish to go on record to the contrary. We should like to see every component sealed and requiring no attention from factory to total obsolescence, and we have plenty of company on that point. But the realization of this goal is far distant if practically attainable.

The manufacturer who is assuming that complete closure and inaccessibility can be foisted upon the operators "until perfection comes" is an optimist and probably riding for a fall. Incidentally, who is to be the guarantor of this perfection, and would our only recourse be a can opener? Operation or maintenance hazard or component perfection are the only justifications for inaccessibility and many times we've wondered if this latter will ever be valid.

Discussing component and installation perfection as a design criterion for aircraft manufacture involves us in a consideration of airframe components and purchased equipment. Without detailing the possibilities and pitfalls of each on the road to perfection, we can unanimously agree that both should strive cooperatively to achieve the goal—a balanced perfection. We use the word "balanced" because perfection varies with the point of view. We've all seen examples of "weight perfection"—light enough to satisfy the most fastidious and *weak enough* to fail in a fortnight; "aerodynamic perfection"—not a protuberance in sight and not a way in the world to see what's under all the smoothness and fairing.

Humidity Indicator: This Humidity Indicator advises of approaching moisture damage to aircraft engines and other delicate devices. Where equipment is protected by means of dehydration, a quantity of blue Protek-Sorb hygroscopic crystals is placed between starched cotton mesh and a clear Lumarith window, then framed in heavy paperboard on which are printed four bars of color. The presence of moisture will change the crystals' color through lavender to deep pink. The "bars of color" are for comparison with the crystals to denote the danger line. The Indicator is placed inside the sealed transparent bag Lumarith side out and is thus frequently inspected during shipment and storage. Protek-Sorb is the product of Davison Chemical Corp., Baltimore, Md.; the envelopes of Celanese Celluloid's Lumarith are made by P. L. Andrews Corp., Glendale, L. I., N. Y.

Explains Watch

In our cooperative striving, we might all do well to consider quite seriously a matter-of-fact accepted solution of a design problem—the watch we wear and carry. Here's a unit designed to tell time; a 100% time utilization is an obvious necessity; space is at a premium; operation is expected accurate over a wide range of temperatures, pressures, humidities, etc.; care is good or bad, depending upon the owner, and so on. Yet, what one of us ever gives a thought to our watch unless we chance to buy a "lemon" or forget to wind it?

We take the dependability under expected or unusual conditions for granted. We ignore the shocks, wettings, and similar proof tests we apply and don't even bother to have it cleaned until it stops. If we give this everyday companion a little thought, its importance to us and its inherent value as a functional design impress us greatly. Here, we might say, is near perfection. The watch maker might almost be safe in sealing up his product completely. Nevertheless, in application we find its mechanism quite accessible to the initiate. And rightfully so, because perfection, universal and timeless, holds every human endeavor outside its gates.

Yes, we can learn a lot from our watches, not necessarily from the mechanism or the case or the specific parts but from the concept of it as a *design for a purpose.* If we as aircraft design engineers could bring ourselves to think through each step of our design with the functional perfection of our watch as a goal for that step and the whole project, our end product might be immeasurably improved. Simultaneously let us in our striving for a balanced perfection remember that secondary design based upon an assumed ultimate perfection is fatal to our product. An airplane comparatively as perfect as your watch is deserving of no less simplicity or accessibility.

Need Clear Picture

The basis for all this discussion is the need for a more comprehensive and clear picture of the transport aircraft's purpose and the plane upon which our design must be made.

We review again some appropriate considerations for the aircraft designer. The airplane's job is to fly not 24 hours a day, yet as many hours as operating conditions permit. On the ground, it's a losing proposition. Five miles per hour faster, five pounds per engine mount lighter, five hours per ship faster production, five times more attractive interior—no one or no combination of these apparent improvements will of themselves complement the *transport appeal* of the aircraft as long as they cost hours on the ground. Let us remember that in an hour on the ground, we have lost 200 miles; in a five-mile per hour faster ship, it will take us 40 flying hours to break even with the slower craft.

Returning to our initial premise, the transport airplane must be a more representative example of purposeful design. The simplicity and accessibility apparent in the breakdown illustrations would be an answer to the maintenance man's prayer; any portion of it which can be built into a design brings us closer to having the "tool" we need to do a real transportation job. Our designs can and should be straightforward, accurate, serviceable—design to your watch. Let its tick say "Make it good!" To act or create from a pending or assumed perfection is tremendously costly, particularly when we are talking in terms of airline aircraft.

Oil Reclaimer: This new model oil reclaimer designed for aircraft engine builders is now being manufactured by the Youngstown Miller Co., Sandusky, O. The capacity of these units is 200 gallons of dirty oil in 90 minutes and it is said that the oil is restored to new oil values of viscosity, fire and flash, neutralization number, color, etc. Smaller capacity units of the same basic operating efficiency are available. The purifier is of contact earth filtration type using refinery earths available in the open market and is designed to remove non-lubricating volatiles by slow heating: solids and asphaltic material by filtration and it is able to remove fuel dilution, water, acids, solid and colloidal carbon, etc.

Electric Sander

Sterling Tool Products Co., 363 E. Ohio Street, Chicago, Ill., announces the new Sterling 1000 electric sander. Powered by a 1/5 hp turbine fan cooled Universal motor, the unit is claimed to be vibrationless as a result of balance and counterbalance

in design; compact in size with snap-action switch on the fitted handle and fast, smooth cutting resulting from a new orbital motion.

Tumbler action clamps operated by key, screwdriver, etc., lock the 1/3 sheets of abrasives on the flexible sanding pad. By using a felt or cloth matrix on the pad the Sterling 1000 can be used for lapping and polishing operations.

Surface Facer

A new surface facing tool to take the place of end mills and shell end mills is announced by Robert H. Clark Co., 3424 Sunset Blvd., Los Angeles, Cal. As shown, it con-

sists of a tapered (or straight) shank and body with three adjustable high-speed bits which may be set for any diameter within the range of the tool.

With only four tools any diameter from 1" to 4½" inclusive may be obtained without being limited to standard fractional dimensions. A measuring gauge, provided with each tool facilitates size adjustments. The bits may be reground or replaced.

Clark Surface Facer is the trade name of the device and the manufacturer advises that suitable priorities will assure prompt delivery.

Paint Spray Booth

Aqua-Restor Division, Mayer Mfg. Corp., 45 Division Pl., Brooklyn, N. Y., announce a paint spray booth featuring both rear and side water-impingement walls. Manufacturer claims: unusual efficiency through continuous and effectively pressured flow; elimination of clogging and need of only low horse power pumps in the absence of spray nozzles; low maintenance cost through elimination of moving parts.

The unit is equipped with fluorescent lighting and turntable. Other sizes or designs, single or multiple units, using the Aqua-Restor "super-turbulent" water-wash principle, may be engineered to meet specific requirements.

Universal Check Valve Now in Production

Now in production under the trade name, "ASP" is a new type Universal Check valve. Allowing 12 possible combinations to be made from one body and two of three types of adapters, ASP is made by American Screw Products, Los Angeles, Cal.

For use in aircraft hydraulic systems, the valve is claimed by the manufacturer to be 16% lighter and to have a two to four times increase in flow capacity with corresponding reduction in back pressure. Made in all standard tube sizes from heat treated aluminum alloy, the standard body with the adapters can be assembled to meet the requirements of any combination of tubing or pipe connectors or direction of fluid flow.

Laboratory tests to 50,000 reciprocations at variable temperatures up to 275 degrees F. have developed no breakdown or distortion. It is claimed that vibration, acceleration and variable pressures have no effect on the valves.

Super-Hard Rivet

North American Aviation, Inc., Inglewood, Cal., has developed a super-hard rivet strong enough to replace bolts on aircraft or other structures. Named "Hi-shear," its use effects a 60% weight reduction over the previously used bolts and rivets, it is claimed. The secret of the rivet is in the method of installation. Having a shear strength of 75,000 pounds per square inch compared with the normal 25,000, the usual manner of driving is not practical. Instead, a special tool presses a tiny aluminum collar into the notched end of the stud, leaving a modified conical head. Excess collar length is sheared off automatically by the tool during the operation. Rivet and tool were both developed by George Wing, an NAA engineer.

Plasti-Seat: One of two basic types of seat developed by Harvill Corp., Los Angeles, Cal. Plastic impregnated fabric is used with special wood structures in their manufacture. Seats are adaptable for training, pursuit and bombing aircraft. Mounting brackets, shoulder harness and adjusting fittings are the only metal parts.

Automatic Bucker

Bucking and riveting simultaneously by a single person is now possible with a new Automatic Bucker announced by the Aero Tool Co., Burbank, Cal. Primary advantages claimed are extremely light weight and ease of handling, resulting in 50% reduction in labor cost and better riveting.

The Bucker with a 22" throat weighs 14 pounds and with a 36" throat 16 pounds including gun. It may be used with any gun and specially designed heads can be furnished for any type of aircraft construction. As a result of exclusive design and construction, it is said that rivets are driven instantly in perfect alignment, reducing rejects and reworks.

Durashield Offered

Durashield, a laminated plastic, is being used as a satisfactory substitute for brass, copper, bronze, etc. in nameplates, dial faces and similar marking plates. A product of Plastic Fabricators, Inc., 500 Sansome St., San Francisco, Cal., the material consists of a 010" center sheet of opaque cellulose acetate plastic on which the wording is printed. On each side of this is applied a .020" sheet of transparent acetate plastic, thus making the final product .050" thick. The material is fire-resistant and further, may be obtained in colors.

New Multitester

Radio City Products Co., Inc., 127 W. 26th St., New York, announces a new Model 419 Multitester which combines in one instrument: AC-DC voltmeter, milliammeter, ammeter, capacitymeter, ohmmeter, and inductance meter. The unit incorporates in its design the manufacturer's new system of AC measurement, eliminating the copper oxide rectifier. AC and DC scales are co-linear. With an accuracy of 2%, the sensitivity of the device is 2,000 ohms per volt. The meter itself is fused and the supply line double fused. Model 419 is available in three different case and dial types, ranging in price from $34.50 to $44.50.

G-M Relay

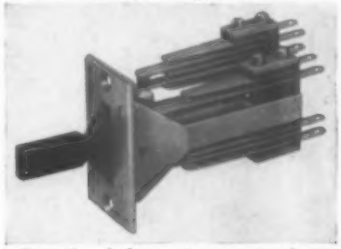
Developed particularly for aircraft use, the new G-M 3PDT Type 27 Relay is the product of G-M Laboratories, 4326 North Knox Ave., Chicago, Ill. A typical unit measures 2" x 1⅞" x 2⅛" and weighs 5 ounces. Its characteristics are: acceleration, 15g plus nominal coil voltage, 12 v d-c; pick-up, 6.5 v (.92 watt) at 20 degrees C.; coil wattage at 12 v d-c, 3.2 watts; contact pressure, 60 grams; contact capacity, 10 amps at 30 v d-c; temperature rise, 32 degrees C. at 12 v d-c.

Butex Rubber Parts

Lights, Inc., 1111 S. Fremont Ave., Alhambra, Cal. is offering precision production of molded, fabricated or bonded Butex synthetic rubber parts. Butex is said to be oil-proof; resistant to gasoline, chemicals, and age; resilient and tough.

New Lever Switch

Donald P. Mossman, Inc., 6133 N. Northwest Highway, Chicago, Ill., announces a 0-42 Lever Switch, now available in an almost unlimited series of combinations of contact assemblies. The 0-42 with eight contact springs weighs 4½ ounces.



Details of the unit are: maximum recommended rating—5 amps at 110 v a.c. (non-inductive); die cast zinc or aluminum frame; silver alloy contacts; plated phosphor bronze contact springs; molded Bakelite latch plate and handle. With an escutcheon plate, the cutout dimensions for mounting are 1-1/8" x 1-13/32"; for panel mounting, slot measurements are 5/16" x 1-1/8".

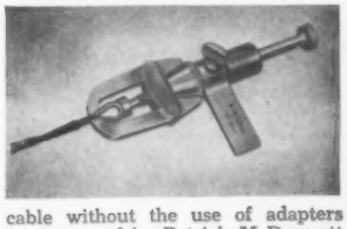
Spee-Dee Printer

Spee-Dee Printer for making blue or black and white prints has been developed by Peck and Harvey, 4325 Addison Ave., Chicago, Ill. The unit is a portable table model com-

ing in two sizes: for prints up to 12" x 18" and to 18" x 24". Printing on a curved glass surface is said to give perfect contact without the inconvenience of wrapping the prints around a cylinder. Price range is from $35 to $65 depending upon size and optional automatic timer. Printing cost is said to be less than 1½ cents per square foot.

Cable Splicing Holder

A new and improved universal quick-adjusting cable splicing holder that handles 1/16" to 7/32"



cable without the use of adapters is announced by Patrick-McDermott & Company of 2704 So. Hill St., Los Angeles, Cal. The thimble and bushing or cable are held in position by only two adjusting screws. A thimble holder adjusting screw gives direct contact to the self-seating thimble socket. Turning the thumb screw places the splicing holder in a rotating or rigid position.

Kaiser and Navy Direct Brewster; New President and Board Named

EMERGING as a top name in aircraft production, Henry J. Kaiser, ship, steel and magnesium maker, announced he has been named chairman of the board of directors of the Brewster Aeronautical Corp., only a few weeks after successful negotiations to acquire Fleetwings, Inc., at Bristol, Pa. He has already taken over direction of the Brewster plant with the approval of the Navy Department.

"Mr. Kaiser has not acquired any stock interest in the corporation. It is his intention to make a comprehensive study of the entire Brewster situation in the near future and report fully to the stockholders," a statement by the Kaiser Company said.

Mr. Kaiser denied that there would be any drastic changes in personnel, replying: "It is my understanding that there is a high degree of skill in the Brewster organization, and it will be my purpose to coordinate their activities and stimulate them to more productive efforts in order to increase the output of dive bombers and fighters."

Kaiser-Hughes Split

Meanwhile, Washington heard that Kaiser and Howard Hughes may split their air cargo partnership. Informed circles state that all Army contracts have been signed directly with Hughes, instead of the partnership.

C. A. Van Dusen, retiring president of the company, indicated that after a brief rest he would return to aviation. In resigning he commented: "The retiring management's decision to stand aside in favor of Henry J. Kaiser is based on the belief the Kaiser management might be able to obtain greater support and proper plant facilities from the United States Government in plans for making Brewster a strong aircraft producer."

Riebel is President

Frederick Riebel, Jr., retired Westinghouse executive and production trouble-shooter for the Navy's Bureau of Aeronautics, has been named president of Brewster in charge of the three plants located at Long Island City, Newark, N. J., and Johnsville, Pa.

In addition the new management will include as directors: T. J. Walsh, president of the Walsh Construction Co., Davenport, Iowa; Paul S. Marrin, chief counsel for the Kaiser interests, San Francisco; Chad F. Calhoun, project manager for Kaiser; William F. Kurtz, president of the Pennsylvania Co., Philadelphia; Capt. George C. Westervelt, U. S. Navy (retired); F. Dean Schwacke, attorney for Brewster; and E. E. Trefethen, vice president of the Kaiser Co., Inc., Oakland, Cal.

Brewster has an estimated backlog of $275,000,000 in contracts. The company stated that its production had increased several hundred per cent since Mr. Van Dusen took charge last May 20. Some 17,000 employes in the plants build the Bermuda and Buccaneer dive bombers for the British Royal Navy and the United States Navy, respectively; the Vought Corsair, and wing sections for the Consolidated BPY.

Double Production

Kaiser told the Washington press on Mar. 10 that he planned to "double production within a year" at Fleetwings. He and the plant's manager, Frank De Ganahl, are confident that this can be accomplished.

Any further plans for additional giant cargo planes, until his present three are completed, have been dropped by Mr. Kaiser who stated that his Fleetwings plant would build "what the Army and the Navy need right now." He refused to divulge the three types of planes now being built at Bristol, but admitted that stainless steel was still a Fleetwings specialty. In addition to planes the plant is also building parts for seven large aircraft companies.

Kaiser said facilities were being expanded immediately through the acquisition of space in buildings already existing as well as through building with non critical materials.

In reply to questions about the cargo ships being built by Kaiser-Hughes he said that static tests on the first plane would be completed this year and that within a year the first plane would be flying.

Stainless Steel Is 'Ideal' for Planes, Ragsdale Claims

Ability of stainless steel to withstand heat, cold, fatigue and heavy blows "makes it an ideal material of use in building modern airplanes," Col. E. J. W. Ragsdale, chief engineer of the Railcar division of Edward G. Budd Manufacturing Co., Philadelphia, asserted in a recent address before the Philadelphia section of SAE.

"Even more remarkable than its resistance to heat is that characteristic of stainless which enables it to retain its impact resistance when cold. At 100 degrees below zero it is the same as at room temperature. I know of no other metal which has this property," Col. Ragsdale continued.

High cost of manufacturing operations in building of planes as compared with relatively low costs of metal components has prompted manufacturers to search for metals which will help to reduce some of this processing cost, according to Col. Ragsdale.

SAE Air Meetings

Society of Automotive Engineers, Inc., New York, N. Y., has announced the following aviation meetings in 1943: National Aeronautic Meeting, April 8 and 9. Hotel New Yorker, New York, National Aircraft Engineering and Production Meeting, Biltmore Hotel, Los Angeles, Cal., Sept.30-Oct. 2, and Air Cargo Meeting, December, Chicago, Ill.

Sub Hunter: Navy PBM-3 Martin Mariners are doing an outstanding job of guarding vital Atlantic, Pacific and Caribbean shipping lanes against Axis subs. This new photo shows the four-bladed propeller being used on the boats, and also shows the "stinger" in the nose.

Brewster Makes Parts

Newark division of Brew Aeronautical Corp., Long Isl City, N. Y., whose operations now directed by Henry J. Kai has announced signing Mar. 22 contract with Curtiss-Wright manufacture wing parts and s assemblies for the C-46 transp Contract was said to involve ab $1,250,000.

Consair-Vultee Merger Approve By Stockholder

Consolidated Vultee Aircraft C poration is the new company res ing from merger of Consolid Aircraft Corp., San Diego, Cal., a Vultee Aircraft, Inc., Vultee Fi Cal., approval of which was vo by stockholders of these compan in meetings March 17.

"By combining the associat companies into one fully integrat company," said Tom M. Girdl chairman of both companies a chief executive officer, "so that all its 11 plants, equipment, mater and personnel can be utilized best advantage, we expect to able to augment production a lower operating costs."

Stockholders' action signified a proval of all proposed financing described in *American Aviati* Feb. 15, 1943, as well as of t boards of directors of the merg firms, who will serve with the ne corporation along with Victo Emanuel, president of Aviation Corp., and V. C. Schorlemmer, wh has been a vice president of Vultee

Executive management of the ne organization, besides Girdler, in cludes Harry Woodhead, presid and I. M. Laddon, executive vic president, who held the same offic in the two separate companies.

School Starts New Training Divisio

Airport Ground Schools, L Angeles, Cal., has announced a ne Industrial Training Division, "t help management organize and con trol employe training."

Division is prepared to "analyz training needs, make surveys existing facilities and submit a de tailed report of findings and recom mendations, create or reorganiz educational departments, set up revise curricula, write and produc lectures, texts and examinations analyze jobs and prepare job sheets recruit and train instructors, co ordinate programs with governme vocational courses to obtain maxi mum benefit from their aids an provide continuous supervision o completed projects."

Designed to assist manufacturer and airlines in meeting increasingly acute manpower problems and es pecially the larger proportion o women workers, this division grew out of the experiences of AGS in developing instructors, chief instructors and directors of training for U. S. AAF schools.

Airborne Commandos

THE part Piper L-4 planes are playing in the war today is just the beginning. Their wartime abilities, already proved on the battle-fronts of the world, point the way to new and important uses.

Their ability to land and take-off quickly almost anywhere, the ease with which they can be hidden and their remarkable maneuverability may well be the means of developing a new kind of Commando warfare. Piper L-4 planes could set down American Commandos behind enemy lines. And, when the boys completed their missions of destruction, these planes could get them back with speed and comparative safety.

When victory is won, a peacetime version of this remarkable Piper plane will carry you quickly and economically on vacation and business trips . . . saving you time and money . . . and giving you great enjoyment.

FREE BOOKLET ON HOW TO FLY. Send today for your copy of the easy-to-understand booklet "You, Too, Can Fly!" If you also want the full-color Piper catalog, enclose 10c in stamps or coin for postage-handling. Piper Aircraft Corporation, Dept. AA43, Lock Haven, Penna.

16 mm. SOUND FILM—"The Construction of a Light Airplane" now available. For point of nearest distribution, write the producer: Supervisor, Audio Visual Aids, Extension Services, Pennsylvania State College, State College, Penna.

PIPER

POINTS THE WAY TO WINGS FOR ALL AMERICANS

U. S. Air Forces Use Canadian Cargo Airplane

The U. S. Army Air Forces are now receiving deliveries of UC-64 utility cargo transport type airplanes, designed and produced by Noorduyn Aviation, Ltd., of Montreal, Que., it is revealed by Canada's Department of National War Services in an announcement approved by the U. S. War Department.

Basically this plane is the Noorduyn Norseman which has been used for a number of years in Northern Canadian commercial transport operations, but modifications and improvements have been made to adapt it for use of the AAF.

The UC-64 is a high-wing monoplane of 7,400 pounds gross weight, quickly convertible from wheels to skis and floats, and is powered with a single 550 hp Pratt and Whitney Wasp engine. It has a wing span of 51 feet, six inches, and is of composite steel tube and wood construction.

Fabric covering is used on all surfaces and the fuselage, except the engine section, cockpit section and the belly of the fuselage to the rear end of the cabin, which are cowled with aluminum sheet. The rear part of the belly fairing is moulded plastic plywood.

The plane is equipped with swing-over type dual controls. In addition to the pilot's and co-pilot's seats, the cabin has removable side-type seats for six passengers. Since in the original commercial ship the cabin was equipped with eight seats, the new arrangement leaves considerable space for military equipment and other cargo, even when passengers are carried.

The pilots' cockpit is provided with "good sized" doors on each side for convenience in loading freight and to enable the crew to get out quickly. The doors can be jettisoned insantly in an emergency.

One of the modifications made for the purposes of the AAF is the installation of additional fuel tanks occupying what is otherwise the baggage compartment in the belly of the fuselage, below the cabin floor. Total fuel capacity of wing tanks, belly tanks and a reserve tank in the fuselage provides a cruising range of over 1,200 miles.

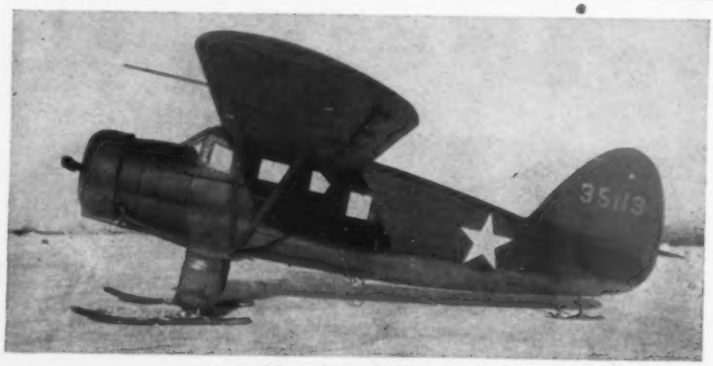
The skis, which it is claimed can be substituted for the wheels in about 20 minutes, are of a new type developed through cooperation between designers of the airplane and the AAF and are said to give better results than any previously used.

President W. L. Bayer of Noorduyn recently reported the firm now has 750,000 square feet of factory floor space compared to 36,000 at the start of the war, and nearly 9,000 employes compared to 140. Its output of training planes in 1942 was listed as 4.39 times that of the previous year. In the last two months of 1942 alone its production was said to have exceeded the entire output of 1941 by six per cent.

Company Backlogs Revealed In Official WPB Report

A list of 252 large corporations "which have the preponderance of war contracts to date," was recently sent by Col. Robert W. Johnson, vice chairman of WPB and chairman of the smaller War Plants Corp., to the Secretary of War, the Secretary of the Navy, the Chairman of the Maritime Commission and the Director of Treasury Procurement. Included in the list, with the value of contracts awarded, were these firms; directly or indirectly connected with aviation:

Corporation or Company	Millions of Dollars
Western Electric Co. Inc.	881.0
American Brass Co.	96.0
Aviation Corp.	65.0
American Propeller Corp.	14.2
Vultee Aircraft Co., Inc.	407.0
Bausch & Lomb Optical Co.	42.4
Beech Aircraft Corp.	224.6
Bell Aircraft Corp.	624.8
Bendix Aviation Corp.	784.5
Bendix Aviation, Ltd.	15.0
Jaeger Watch Co. Inc.	5.7
Blaw-Knox Co.	72.9
Lewis Foundry & Machine Co.	7.9
Boeing Aircraft Co.	1.826.1
Borg-Warner Corp.	54.6
Pump Engineering Service Corp.	31.3
Brewster Aeronautical Corp.	257.3
Briggs Manufacturing Co.	197.8
Budd, Edward G. Manufacturing Co.	155.5
Cessna Aircraft Co.	145.7
Chrysler Corp.	1.562.0
Cincinnati Milling Machine & Cincinnati Grinders Inc.	41.0
Consolidated Aircraft Corp.	1.758.5
Continental Motors Corp.	294.8
Continental Aviation & Engineering Corp.	42.7
Crucible Steel Co. of America	112.6
Curtiss-Wright Corp.	2.444.9
Wright Aeronautical Corp.	2.168.2
Douglas Aircraft Co. Inc.	2.373.1
du Pont, E. I. de Nemours & Co.	867.0
Edo Aircraft Corp.	31.1
Electric Auto-Lite Co.	122.9
Electric Storage Battery Co.	25.1
Willard Storage Battery Co.	3.3
Emerson Electric Mfg. Co.	101.5
Fairbanks Morse & Co.	277.7
Fairchild Aviation Corp.	95.9
Fairchild Aerial Surveys Inc.	5.2
Fairchild Engine & Airplane Corp.	201.9
Firestone Tire & Rubber Co.	126.3
Ford Motor Co.	2.036.1
General Electric Co.	1.128.8
General Motors Corp.	7.251.1
General Tire & Rubber Co.	64.9
Goodrich, B. F. Co.	130.5
Goodrich Tire & Rubber Co.	188.1
Goodyear Aircraft Corp.	241.8
Goodyear Engineering Corp.	11.5
Grumman Aircraft Eng. Corp.	649.8
Hayes Industries, Inc.	41.9
Higgins Industries, Inc.	59.0
Houdaille-Hershey Corp.	80.2
Hudson Motor Car Co.	135.1
Jack & Heintz, Ltd.	174.1
Jacobs Aircraft Engine Co.	107.2
Kaiser Co. Inc.	609.2
Kelsey-Hayes Wheel Co.	104.6
Kendall Co.	11.0
Chase Brass & Copper Co. Inc.	91.9
Link Aviation Devices Inc.	41.8
Lockheed Aircraft Corp.	934.5
Vega Airplane Co.	438.0
Martin, Glenn L. Co.	1,328.7
Minneapolis-Honeywell Regulator Co.	78.2
Nash-Kelvinator Corp.	268.5
Norden, Carl L. Inc.	61.9
North American Aviation Inc.	978.3
Northrop Aircraft Inc.	147.9
Packard Motor Car Co.	222.6
Permanente Metals Corp.	189.0
Pollak Mfg. Co.	27.2
Pullman Inc.	451.4
Radio Corp. of America	161.7
Republic Aviation Corp.	437.9
Republic Steel Corp.	111.8
Truscon Steel Co.	12.1
Revere Copper & Brass Inc.	79.7
Russell Mfg. Co.	26.5
Ryan Aeronautical Co.	112.4
Ryan School of Aeronautics	7.1
Shell Oil Co., Inc.	62.8
Socony Vacuum Oil Co., Inc.	14.8
Ford Instrument Co., Inc.	197.3
Sperry Gyroscope, Inc.	602.1
Vickers, Inc.	40.3
Square D Co.	57.2
Standard Oil Co. of Cal.	80.5
Standard Oil Co. of New Jersey	138.9
Humble Oil Co.	17.8
Stewart-Warner Corp.	65.0
Studebaker Corp.	225.5
Texas Co.	30.3
United Aircraft Corp.	2,236.1
United Aircraft Corp. of Missouri	106.5
Reynolds Metals Co.	21.9
U. S. Rubber Co.	549.0
Carnegie Illinois Steel Corp.	140.4
Columbia Steel Co.	6.2
National Tube Co.	56.9
Waco Aircraft Co.	40.8
Westinghouse Electric & Mfg. Co.	317.7



Noorduyn UC-64

Aviation Corp. Reports Profit of $4,723,89

Aviation Corp., New York, N. Y. has announced net income of $4,723,894, equal to 82c a share, on net sales of $45,530,638, for operations in the fiscal year ended Dec. 30, 1942, compared with net income of $2,454,142, or 42c, in the previous year.

This income was realized on the company's wholly owned divisions and subsidiaries, associated companies, and on certain investments. Some of these affiliated organizations are reported elsewhere in this issue of *American Aviation*.

"We are concerned with the present uncertainties affecting business to the extent that they may make the transition (to peace time) difficult or even impossible," company said in discussing wartime developments and postwar prospects. The general research department established during 1942 under the direction of A. J. Snow, is looking for "the best and most advanced manufacturing techniques . . . for the job of winning the war, and they will be of the greatest value to the nation and our industrial enterprise in post-war rehabilitation and progress," announcement reveals.

It was disclosed that the Lycoming Division "broke all its previous production records during 1942" and that with expanding plant capacity "at the end of the year the rate of production was twice that of a year earlier . . ." Total employment in this division was described as up 50% during 1942, with one-third of new employes women, and "percentage of women workers is increasing steadily."

In American Propeller Corp., wholly owned subsidiary, "plant output increased consistently every month, and at year-end was running approximately two months ahead of contract schedule. Production for December was 40% greater than for the month of November."

At Republic Aircraft Products Division during November, 1942 "production multiplied . . . nearly three times." As a method of solving the increasingly difficult worker recruiting problem, Republic "started an enlarged training plan for new employes, including the establishment of a new training center for re-employment training of inspectors and machine tool operators."

Consolidated balance sheet as of Nov. 30, 1942, shows total assets of $36,519,135. Current assets are $18,306,202, including cash, $4,983,947, and accounts receivable, $4,595,137. Current liabilities are listed as $10,632,356, including accounts payable —trade, $2,215,528.

Provision for Federal income and excess profits taxes amounted to $6,500,000. Investments of the Corporation in its operating divisions and in American Propeller Corp., totaled approximately $13,000,000 at the end of the 1942 fiscal year.

West Coast Aircraft Commission's Members and Duties Reported

National War Labor Board has defined the duties of the West Coast Aircraft Commission which is to interpret and assist in carrying out the terms of the Board's order establishing wage rates for aircraft companies on the Coast. The Committee shall have the power "to issue orders effectuating, carrying out, and applying the provisions of the directive order and to issue orders determining any dispute that may arise from the order that cannot be resolved by mutual agreement."

Industry members of the committee are: M. E. Beaman (North American Aviation) and Graham L. Sterling (Northrup). Labor members are: Roy M. Brown (IAM-AFL); and William H. Brodie (UAAAIA-CIO). Industry alternates are: L. R. Becht (Consolidated); W. G. Tuttle (Vultee); Martin Porter (Lockheed); A. M. Rochlen (Douglas). Labor alternates are: Thomas McNett (IAM-AFL); Edward Hertz (UAAAIA-CIO); and Donald Ketchum (United Aircraft Welders of America).

New Gas Process Ready for Air Uses

Development of a new "bead catalyst" which may step up the quality of high octane gasoline to furnish 25% to 35% more power to supercharged aircraft engines has been announced by Socony-Vacuum Oil Co., Inc., New York. About 500,000 barrels a day are already being produced by a pilot plant, with other plants building.

One possible result might be larger bomb loads for Allied planes over Germany, according to John A. Brown, Socony-Vacuum president. Use of the new catalyst would have added about 15% to the mileage obtained from fuel used in some recent raids, Brown said. He also claimed greater lifting power for the new gas, which would permit "an increased load of about two or three tons of bombs out of every 10 tons carried." Fighter planes would gain "either in maximum speed or rate of climb."

The new process, called Thermofor Catalytic Cracking, yields a higher aviation base gasoline stock because the bead catalyst is more resistant to wear than the clay catalyst of the Houdry process or the fruit catalyst in general use, company explained.

Houdry processing units can be converted to use of the new catalyst which, it is claimed, will improve their performance beyond "any catalytic operation known to date."

NORTH AMERICAN AVIATION, Inc., Inglewood, Cal., has initiated two 10 minute rest periods daily during each shift in all its manufacturing divisions, with designated "smoking areas" and music broadcast over the public address system.

Manufacturing Digest

LEAR AVIA, Inc., Piqua, O., has announced it has leased a former furniture plant in Michigan, for occupancy about March 1, for manufacture of aircraft accessories and radio equipment.

NORTH AMERICAN AVIATION, Inc., Inglewood, Cal., announces that a Texas plant has finished 10,000 of the AT-6, or Texan, trainer plane, and that the 10,000th plane left the factory "sometime ago, so long ago, in fact, that it is no longer confidential."

THESE FIRMS have been selected to receive the Army Navy Production Award, War Dept. announces: Holley Carburetor Co.; Pangborn, Corp., and Western Electric (renewal).

CURTISS-WRIGHT Corp., New York, N. Y., has announced its Propeller Division has opened new quarters next to its New Jersey plant for the training of specialists in the AAF Technical Training Command. Students will arrive weekly from military bases, and will be accommodated in 10 classrooms.

AIRCRAFT COMPONENTS, Inc., Van Nuys, Cal., reports that both its Eastern and Western plants are now in full production, on aircraft exhaust systems exclusively.

AVIATION Corp., New York, N. Y., has announced its Lycoming Division at the end of 1942 was producing aircraft engines at twice the rate of a year earlier, and that about one third of all new employes recruited at its plant during the past year were women. One of its aircraft engines was converted in 1942 for use in light tanks, but details have been withheld.

DOWTY EQUIPMENT Corp., Long Island City, N. Y., has revealed plans for renovations at its Long Island City plant which include enlarging the engineering department, installation of new lighting facilities and some features which have been tried in another plant. Lease has been renewed for three years.

VEGA AIRCRAFT Corp., Burbank, Cal., has disclosed plans for establishing branch assembly plants in the smaller communities which have not yet lost too much manpower to the large manufacturing centers. In these branch plants finished parts will be assembled into sub-assemblies.

TRUSCON STEEL Co., Van Dorn Iron Works Co., Fleetwings, Inc., and Pump Engineering Service Co. (Division of Borg-Warner), have been selected to receive the Army Navy Production Award, War Dept., has announced.

THESE FIRMS have been selected by the War Dept. to receive the Army-Navy Production Award: Pump Engineering Service Corp., division of Borg-Warner; Columbian Steel Tank Co.; Crouse-Hinds Co.; GMC, Inland Mfg. Division, and The Weatherhead Co.

MACWHYTE Co., Kenosha, Wis., announces it is planning a special ceremony for formal receipt of the Army-Navy Production Award, which it was awarded recently.

EPISON AIRCRAFT Corp., New York, N. Y., has filed dissolution papers, having stopped doing business as of Feb. 4, 1943, according to S. R. Thompson, vice-president-engineering and sales, of the former firm. Thompson is continuing, at 417 Riverside Drive, New York, N. Y., "the development of plywood and plastic substitutions for the United States Navy (Bureau of Aeronautics), various commercial airlines, particularly American Airlines, and the Army Air Forces."

JACK AND HEINTZ, Inc., Cleveland, O., reports it has leased Honeymoon Isle off the coast at Clearwater, Fla., as a vacation spot for its employes. This location, the third in Florida chosen by this firm, has 50 cottages for couples on J and H's two weeks' vacation plan.

INTERNATIONAL HARVESTER Co., Chicago, Ill., announces it has been making aircraft torpedoes for the Navy for some time, and that some of the torpedoes are now with the fleet, ready for use. Several plants are engaged in this production, and Harvester claims it is several months ahead of schedule.

THESE FIRMS have been selected to receive the Army-Navy Production Award: Electronic Laboratories, Inc.; Fairchild Aircraft Division, Fairchild Engine and Airplane Corp.; Aircraft Accessories Corp., Burbank division; AiResearch Manufacturing Co.; Continental Motors Corp.; Steel and Tubes Division (Cleveland), Republic Steel Corp., and Wittek Manufacturing Co.

DOUGLAS AIRCRAFT Co., Santa Monica, Cal., reports Chicago has been selected as location for additional production of the C-54 Skymaster, transport and troop carrying ship, used by President Roosevelt on the over-land parts of his recent Casablanca trip.

PULLMAN STANDARD CAR MFG. Co., Chicago, Ill., has revealed a 1,400% increase of orders in its aircraft division, which, with three new assembly lines, now makes a variety of surface components.

Radio Energy Used To Detonate Rivets

Use of radio frequency energy to detonate explosive rivets in aircraft manufacture to assure "control of temperature in the firing tip," has been announced by E. I. du Pont de Nemours and Company (Inc.), Wilmington, Del.

Developed by engineers of Radio Corp. of America and of du Pont, the radio unit "consists of an oscillator together with a specially prepared applicator to concentrate current directly into the rivet head." As current is induced in the rivet head, resulting heat fires the charge. Du Pont claims radio energy prolongs indefinitely the life of the firing tip.

Wickwire Spencer Nets $1,599,004

Wickwire Spencer Steel Co., New York, N. Y., reports net earnings for 1942 as $1,599,004, or $3.48 per share, after deduction for general contingency reserve. Comparative net earnings in 1941 were $1,578,462, or $3.44.

Provision of $1,140,000 was made for Federal and state income taxes, not including any amount for excess profits taxes. During 1942, loans from the Reconstruction Finance Corp. amounting to $1,402,519.46 were paid, and new five year loan of $1,250,000 was made from The First National Bank of Boston at two and one-half per cent, which by the end of the year had been reduced by $464,701.89.

Balance sheet as of Dec. 31, 1942 shows total assets of $22,092,410.69, and current assets of $10,922,212.11. Current liabilities were $2,472,456.44, and earned surplus, since May 1, 1937, amounted to $1,808,680.07.

Breeze Reelects

Stockholders at recent meeting unanimously reelected management of Breeze Corporations, Inc., Newark, N. J., consisting of John T. Mascuch, president, Joseph F. Lucas, vice president, and Fred G. Shupp, treasurer. Herbert J. Dwyer was elected secretary. Joseph J. Mascuch, founder of the firm and a former president and director, did not seek office. In addition to the three reelected officers, board of directors consists of: Frank C. Mindnich; Clarence K. Pistell, Robert B. Reynolds, and David T. Wilentz, who was elected chairman of the board.

Officers Reelected

At recent annual meeting, Culver Aircraft Corp., Wichita, Kan., reelected Charles G. Yankey, president, Walter H. Beech, vice president, T. Bowring Woodbury, vice president and general manager, Al Mooney, vice president and chief engineer, Harold S. Kinsley, vice president, Verne M. Laing, secretary, Robert C. Faris, assistant secretary and Felix M. Farrell, treasurer. Faris continues also as general purchasing agent. Six former directors were reelected, along with two new ones: Harold S. Kinsley and Robert C. Faris.

New McDonnell Office

McDonnell Aircraft Corp., St. Louis, Mo., has announced the opening of a Washington office which will be under the direction of A. Ogden Pierrot, until recently chief of Engine Production Planning in the Aircraft Production Division of WPB. Office is located in the Shoreham Building. Previous to his connection with WPB, Pierrot for seven years conducted a South American sales and service agency, with headquarters in Buenos Aires, for a group of U. S. aircraft manufacturers which included Curtiss-Wright, Glenn L. Martin, Grumman, Fairchild and Stinson.

United Aircraft Reports '42 Profit of $17,096,842

Net profit in 1942 on U. S. Government sales was less than 2% compared with 5% in 1941, United Aircraft Corp., East Hartford, Conn., has reported, in revealing earnings in 1942 of $17,096,842 equal, after provision for dividends on 5% cumulative preferred stock, to $5.95 each on 2,656,691 shares, common. No other earnings comparisons were available.

Profit was realized on total income, before charges, of $521,748,413, including sales of aeronautical products, parts and service, $518,970,578.

Substantially all sales have been on a fixed price basis, company disclosed, stating that in 1942 86% of total shipments were for the account of the United States Government, compared with 59% in 1941, when substantial deliveries were being made to Great Britain.

Federal normal income and surtaxes for 1942 totaled $6,388,090, and excess profits taxes, less a postwar refund of $3,897,271, were $35,075,437. Tax adjustments enabled United to hold Federal taxes to a figure of about $41,400,000 in 1942, compared with revised figures of $55,700,000 in 1941.

During 1942 an addition of $13,897,271 was made to the reserve previously provided for expenses and rehabilitation costs incident to changeover to postwar conditions.

Consolidated balance sheet as of Dec. 31, 1942, showed total assets of $208,278,111; current assets were $160,119,207 and current liabilities $78,292,137, exclusive of $7,883,729 of advances on sales contracts. Cash at the end of the year amounted to $32,892,181. Earned surplus was $14,894,751.

TAPCO Annual Report Shows $390,200 Profit

Thompson Aircraft Products Co., Euclid, O., has reported net profit of $390,200 for 1942 on sales of $26,025,233 even "after absorbing the operating loss for the first three months and large initial costs for training, tooling, etc."

Estimated Federal taxes on income amounted to $1,860,000. Balance sheet as of Dec. 31, 1942 shows total assets of $14,283,705.02 and current assets of $13,151,570.37, including cash, $2,384,607.49. Total liabilities are listed as $12,683,861.33, including accounts payable $2,607,509.60. Earned surplus was $44,398.92.

Thompson Products, Inc., Cleveland, O., excluding TAPCO, reported earnings during 1942 of $2,051,417, on sales of $60,920,795, equal, after provision for dividends on the prior preference stock, to $6.49 on each of 295,490 shares of common. Sales in 1941 amounted to $42,459,890. At the end of the year company had current assets of $16,385,253 and current liabilities of $6,751,566.

Central Aircraft Council Formed; Breech Chairman

Formation of a Central Aircraft Council, affiliated with the Automotive Council for War Production, was announced in Detroit March 20.

The Central group will include manufacturers of airplane engines, airframes and such components as propellers, carburetors, instruments, landing gears and other vital accessories as well as of completed planes.

Top committee in charge of activities will be: Ernest R. Breech (chairman), president, Bendix Aviation Corp.; H. E. Blythe, vice president, Goodyear Aircraft Corp.; George T. Christopher, president, Packard Motor Car Co.; M. I. Peale, vice president, Republic Aviation Corp. (Indiana); E. B. Meissner, president, St. Louis Aircraft Corp.; A. T. Colwell, vice president, Thompson Products, Inc.; O. E. Hunt, vice president, General Motors Corp., Walter Wagner, executive of Ford Motor Co., and Clarence E. Bleicher, vice president, Chrysler Corp.

Officials of Wright Field and of the Central Procurement District of U. S. AAF requested formation of this group, since it was felt desirable for Wright Field's Aircraft Scheduling Unit to have one point of contact with manufacturers in the Central district on problems dealing with Controlled Materials Plan procedure. It is believed the Council will be able to expedite many problems through such proposed joint action, according to ACWP.

Central Council will consist of three divisions, (1) airframe manufacturers, (2) aircraft engine manufacturers, and (3) all component manufacturers. All members of the Automotive Council for War Production holding prime contracts automatically become members of the new Council.

THE WALL STREET JOURNAL, TUESDAY, MARCH 9, 1943

United Aircraft News

A REPORT OF PERFORMANCE AT HOME AND ABROAD

PUBLISHED MONTHLY BY HAMILTON AIRCRAFT CORPORATION, EAST HARTFORD, CONNECTICUT

On the Fighting Front

CORSAIR IN ACTION

Grumman Wildcats, Guns Empty, Defeat Jap Zeros

Trapped on Rabaul Beach, Outnumbered Three to One, Pilots Shot Enemy and Return Without Loss

Navy's New Shipboard Fighter, Built Around 2,000-hp. Double Wasp, Hits New Highs in Combat Performance

Collier Trophy Goes To Army-Airline Team

Air Lines and Army Transport Outdoors Win Coveted Award

ALL-CARGO AIR ROUTE EXTENDED

100,000 Miles—$2.71 Repairs

Today's Line-up—America's War Planes in Action

Casablanca Conference Ride With United's Engines and Propellers

On the Production Front

One Year of War

Annual Statement Reveals Aircraft Industry Meeting the Supreme Test

U. S. NAVY GIVES PREVIEW OF TOMORROW'S AIRCRAFT

Welfare, Steam Gas Navy and Private Industry Cooperate to Create New Weapons

KANSAS CITY, MO. BECOMES AIRCRAFT ENGINE ARSENAL

Unique Ad: United Aircraft Corp. ran No. 1, Vol. 1 of a new series of monthly full-page ads in major newspapers recently stressing company news written to interest the public.

Materials Proble Worse Than Abse Employees - AWP

Absenteeism has not been actual retarding factor in milit aircraft production during the p year, the Aircraft War Produc Council states in a report to W Manpower Commission and o Government agencies. It is fre admitted that there has been a senteeism, representing a substan number of manhours, but it i not been the limiting factor. M terial shortages and imbalanc have been more limiting.

However, the Council warns th if its member companies are meet the expanded producti schedules of the coming year, a senteeism could be a vital issu provided the materials flow in suf cient quantities. With the ma power reservoir nearly draine each manhour will become of crit cal importance.

A survey of methods employe to combat absenteeism by each the companies comprising th Council is included in the repor An analysis of long-range and co ordinated plans for future contr of absenteeism in aircraft plants also submitted.

Bell Sales Up, Nets $4,203,583

Net profit for the year ended Dec. 31, 1942 of $4,203,583, on sales of $130,763,227, has been revealed in annual report of Bell Aircraft Corp., Buffalo, N. Y., which also announced that company's new southern plant, to be known as Bell Bomber Plant, Georgia division, will be ready for occupancy about April 15.

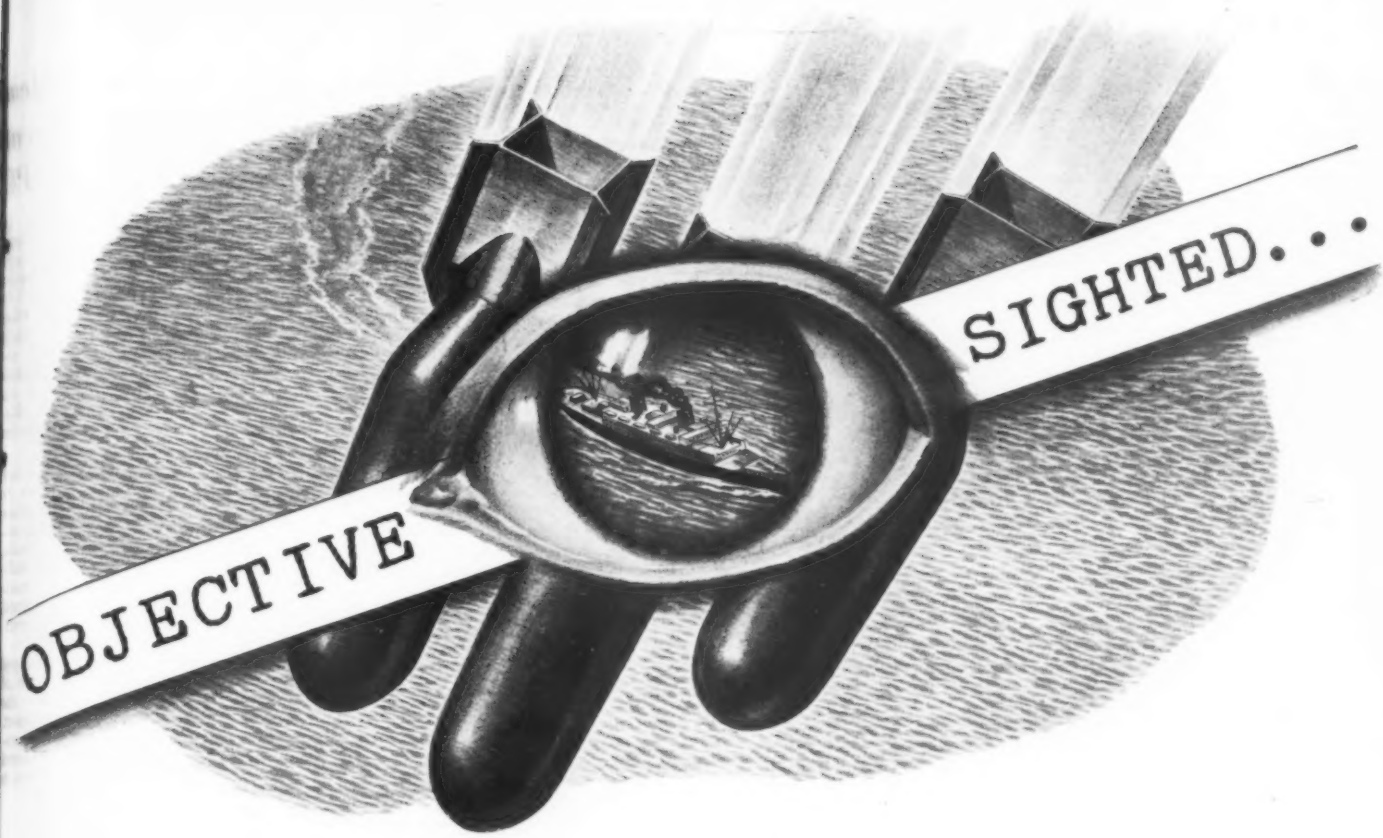
This compares with 1941 profit of $1,970,645, on sales of $46,414,444. Provision of $17,750,000 was made for Federal income and excess profits taxes in 1942, with estimate of $1,800,000 as post-war refund. Company set aside $1,200,000 for contingencies.

More than 47% of Bell's productive employes are women, report said, "as contrasted with none in those departments prior to Pearl Harbor. They are doing an excellent job."

Bell's southern plant was described as "government-owned and will be operated by your company on a cost-plus-fixed-fee contract for the production of heavy bombers, not of our design." Key executives, technical and production personnel will be transferred from the company's New York plants.

Snyder Opens Branch

Opening of a sales branch at Sullivant Avenue Airport, Columbus, O., to serve the Eastern area, has been announced by Snyder Aircraft Corp., Chicago, Ill. Parts and accessories will be maintained at the new outlet, but all rebuilding and overhaul will still be done at the firm's Municipal Airport establishment in Chicago.



In that split second when bombardier and bombsight have their secret accord, the real purpose of a military bombing plane is achieved. Everything that goes before is directed toward this end.

Among the hundreds of contributing factors that enable a plane to reach its objective are Delco electric motors. Conforming to latest military requirements, they drive transfer pumps, booster pumps and windshield wipers . . . help safeguard the flow of engine fuel and protect the pilot's vision.

These motors and other aircraft products are being built by Delco Products for America's fighters and bombers. Delco Products is well equipped to serve the aircraft industry, both today and in the days that follow Victory.

Fuel Pump Motor

Windshield Wiper Motor

DELCO MOTORS

DIVISION OF GENERAL DELCO PRODUCTS DAYTON, OHIO MOTORS CORPORATION

$556,444 Profit Reported by Ryan

Net profit of $556,444.19, equal to $1.27 a share on operations during the fiscal year ended Oct. 31, 1942, has been announced by Ryan Aeronautical Co., San Diego, Cal.

Gross revenues, $19,620,076.46, were more than double the $8,390,201.28 figure reported for the 10 months ended Oct. 31, 1941. Net profit for that period was $669,603.44, or $1.52 a share. Provision for renegotiation in the 1942 year amounted to $1,700,000. Provided for Federal taxes was $1,969,139.41, against $1,398,297.07 in the previous year.

Of the $19,620,076.46 gross revenue in 1942, $3,081,734.99 was derived from school operations, which compares with $1,582,348.60 received from that source in the prior fiscal period.

Ryan's present assignment from the Navy, "the design and development of a new combatant airplane of a very advanced and important type," company believes "offers greater future possibilities than the former program (a new type Navy scout observation plane)."

Ryan School of Aeronautics of Arizona, wholly owned subsidiary, which was established during 1942 through contracts with the War Department and Defense Plant Corp., is described as operating now on a profitable basis, although a "moderate loss was sustained (in) . . . the (1942) fiscal year."

Consolidated balance sheet as of Oct. 31, 1942 shows total assets of $8,031,699.86. Current assets total $6,566,635.48, including cash, $1,923,117.13, and accounts receivable —trade, $2,083,785.27. Total current liabilities are $5,288,852.06, including accounts payable $966,501.09. Earned surplus amounted to $1,500,599.78.

Ryan Management Re-elected, Opposition Nominees Defeated

An opposition group, which voted 69,929 shares of a total of 340,671, and which had attempted through proxy solicitation to gain control of the board of directors, was defeated at recent stockholders meeting of Ryan Aeronautical Co., San Diego, Cal.

T. Claude Ryan, president, Earl T. Prudden, vice president and George C. Woodward, secretary, were re-elected. John E. Haskell, real estate operator, and Vance Breese, test pilot, were nominees of the opposition.

Dowty Appoints Greer

Dowty Equipment Corp., Long Island City, N. Y., has announced appointment of Greer Hydraulics, Inc., 60 East 42nd St., New York, N. Y., consulting engineers on hydraulic equipment.

Consair, Vultee Triple 1941 Deliveries; Profits Increase

Deliveries of warplanes by both Consolidated Aircraft Corp., San Diego, Cal., and Vultee Aircraft, Inc., Vultee Field, Cal., in the fiscal year ended Nov. 30, 1942 were "more than three times 1941," according to annual reports to stockholders.

Consolidated reported net income of $10,323,779, equivalent to $8.04 a share, on net sales of $304,013,649, subject to further renegotiation of contracts. This compares with net income of $8,024,882, or $6.22 a share, for the 11 months ended Nov. 30, 1941, on sales of $95,529,050. A net reserve of $42,635,403 for Federal income and excess profits taxes was set up in the '42 year, contrasted with $18,195,390 provided for Federal taxes in the 1941 period.

Consair attributes achievement of the 1942 production record to further extension of mass production methods. "Complex assemblies now are broken down into simple units, making it possible to train workers easily and for them to attain efficiency quickly through repeating the same operation . . . Consolidated is (now) producing giant planes on mechanized assembly lines . . ." These methods, says Consair, are "being extended steadily."

With the addition in December 1942 of the Stout Research Division, company is "preparing for the planes of tomorrow. Already experimental test flights have been made of a larger bomber of new design and superior performance. Looking into the future, a radically new plane is being developed. As a bomber it could make non-stop trips to Europe and return. As a transport it could carry 400 passengers across the Atlantic."

Women now comprise 40% of Consair's workers, report reveals, and of workers being hired, 60% are women. "Women are working out well in airplane construction and are proving themselves adaptable . . . and are paid the same rates as men."

Consolidated's balance sheet as of Nov. 30, 1942 shows total assets of $178,885,471.69. Current assets are $169,703,411.81, including cash of $37,847,920.17 and accounts receivable, $34,637,978.19. Total current liabilities are $155,001,254.91, including notes payable to banks, $25,000,000, and accounts and wages payable, $37,243,566.26. Earned surplus, subject to any further renegotiation, is $14,361,956.78.

Vultee reported net income for the '42 year as $4,291,140, subject to renegotiation, equal to $3.33 a share on 1,203,755½ common, on net sales of $109,772,850. This contrasts with net income of $3,100,735, or $2.95 each on 1,052,168 shares on net sales of $34,057,207 for the year ended Nov. 30, 1941. In the 1942 year $21,556,100 (net) was provided for Federal income and excess profits taxes, opposed to $2,970,000 for the same purpose in the 1941 year.

Additional conveyors were installed in the Vultee Field Division during 1942 to extend the advantages of mechanized assembly, report discloses, and in two instances these installations "reach all the way through sub-assembly departments and into fabricating divisions." Powered final assembly lines have also been in operation for some months in the Tennessee division and conveyors have been installed in the Michigan plant. Among the basic mechanical improvements, Vultee lists conveyor lines for arc welding steel tube fuselages, and conveyor lines for assembly of wing center sections.

Its research activities have resulted, Vultee reports, in the use of non-critical materials comprising 47% of the airframe weight of the Valiant trainer, a saving in aluminum sufficient to "build 400 more Vengeance dive bombers annually."

During fiscal 1942, Vultee's total personnel increased 59.8%, in all divisions. Male workers increased 30.7%, but the number of women increased 284.3%, and women comprise 30% of all Vultee employes.

To meet postwar conditions Vultee asserts "a program of engineering research and market analysis is being carried out for study of the various aircraft types which may best be adapted to the peacetime production facilities of the Company . . . Concerted efforts are centered on pioneering advanced methods—on creating new research techniques—and manufacturing procedures."

Vultee's balance sheet as of Nov. 30, 1942 shows total assets of $91,790,052.06. Curent assets are $88,354,855.83, including cash, $19,554,394.58. Total current liabilities are $66,049,619.78, including notes payable—banks, $7,908,138.10, and liability for voluntary refunds to United States Government, $10,500,000. Reserve for post-war readjustment was $1,700,000, and earned surplus was $6,581,829.78.

North American Officials: This recent photo shows the top executives of North American Aviation. Left to right are J. H. "Dutch" Kindelberger, president; R. H. Rice, vice president-engineering; J. S. Smithson, vice president-manufacturing; R. A. Lambeth, treasurer, and J. L. Atwood, executive vice president.

U. S. Steel Corp. Lists Aviation Products

The United States Steel Corp., New York, N. Y., in its annual report released March 25 lists nearly a score of aircraft equipment items which it produced in volume during the past year.

These included portable landing mat steel; airplane propeller shaft forgings; drums for aviation gasoline; stainless steels for exhaust stacks, fire walls, ammunition boxes and bomb racks; alloy steels for engine, propeller and landing gear parts; special alloy steels for wing and fuselage covering; special aircraft tubing, bolt stock, spring strand, rope and aerial target towing cable.

Aircraft armor plate and cement of various types for air facilities also were listed.

Columbia Steel Co., a subsidiary, participated to a great extent in the Pacific Coast expansion of aircraft, shipbuilding and other war industries by furnishing many vital steel products, the report said.

Discussing invention of the portable interlocking steel landing mat by Carnegie-Illinois Steel Corp., U. S. Steel subsidiary, Chairman Irving S. Olds said: "It was pronounced the outstanding development of the year in the field of aviation by the Chief of the Army Air Force. As mass production methods were evolved, other companies were licensed to use the process, and 30 smaller manufacturers are now producing these landing mat sections in quantity."

U. S. Steel reported 1942 income from sales and services of $1,951,692 compared to $1,617,410,000 for 1941.

Absentee Rate Down

Aircraft War Production Council, Inc., Los Angeles, Cal., reports absentee rate of its member firms which was 7% at the end of 1942 was reduced to 6.2% at the end of January, 1943. One company brought its rate down from 6.1% to 4.3% within a month. (February estimate).

Norway's unconquerable warbirds

These are the deadly Northrop N3 Patrol Bombers with which the Royal Norwegian Naval Air Force for nearly two years has helped to hold the Nazis on our North Atlantic sea border

BY MID-JUNE IN 1940, the Nazis had overrun all of Norway. And we here at Northrop had just begun work on a new patrol bomber for the Royal Norwegian Naval Air Force.

Quit? Not those fighting-hearted Norse! Teaming up with the RAF, they established "Little Norway" in Canada; ordered us to rush completion of these Northrop N3-PB's for combat use in the Far North.

The job, from preliminary sketches to the first bomber off the line, took us exactly nine months and one day.

We're particularly proud of that record, for the N3-PB is a favorite with Northrop men and women. Not just because this hard-hitting bomber is the world's fastest military seaplane. Nor because she can pack 2000 pounds of bombs or a torpedo with equal grace. Nor is it because she can throw more lead than many a four-motored bomber. What pleases us more than any of these virtues is her STURDINESS.

Battered for nearly two long years by North Atlantic winds and waves and storms, with vast distances their everyday assignment, these swift petrels of Norway's Royal Navy have proved as tough as the Vikings' sons who fly them.

In battle, the Northrop N3 Patrol Bombers have shown their strength, too. They have sent to the bottom more than their share of U-boats. They are reputed to have taken part in the epic chase of the Bismarck. They have driven back giant German bombers.

We hope you'll pardon a manufacturer's pride in relating all this to you, for the Northrop N3-PB is just one of a number of American-built warplanes that have helped to set the pattern for victory. *(You can help to shape this victory pattern more swiftly by buying War Bonds in increasing numbers.)*

NORTHROP AIRCRAFT, Inc.

NORTHROP FIELD, HAWTHORNE, CALIFORNIA • MEMBER AIRCRAFT WAR PRODUCTION COUNCIL, INC.

Manufacturing Personnel

Kimes

Ireland

Colvin

Stites

Evan Randolph has resigned as a director of Brewster Aeronautical Corp., Long Island City, N. Y.

Timothy E. Colvin has been named executive vice president in charge of the Burbank division of Aircraft Accessories Corp., Burbank, Cal.

Ralph R. Kimes, formerly purchasing agent, non-productive material, West Coast, Douglas Aircraft Co. has been appointed general manager of Aircraft Tools, Inc.

J. A. Ireland, formerly division sales manager, has been promoted to assistant general manager of sales of the Steel and Tubes Division of Republic Steel Corp., Cleveland, O.

Joseph D. Stites, in an engineering capacity with Wickwire Spencer Steel Co. for several years, has been appointed manager of Wickwire Spencer Aviation Corp., New York, N. Y.

Frederick R. Cross, formerly sales manager, Alemite Division, Stewart-Warner Corp., Chicago, is now general manager of Aro Equipment Corp., Bryan, O.

At Lockheed Aircraft Corp. and Vega Aircraft Corp., Burbank, Cal., **Cyril Chappellet** resigned as vice president of Lockheed and was elected vice president of Vega; **Louis Wulfekuhler,** secretary of Lockheed, has been elected secretary of Vega, and **Carl B. Squier,** vice president-sales manager of Lockheed, has been elected a vice president of Vega.

Kenneth C. G. Gordon, formerly assistant manager of the Technical Department of the Aeronautical Chamber of Commerce of America, Inc., has joined Fleetwings, Inc., Bristol, Pa., as a project engineer.

Gene P. Robers has succeeded **Robert H. Weatherhead,** now in the services, as advertising manager of the Weatherhead Co., Cleveland, O.

Donald S. Appleyard, formerly with the U. S. Employment Service, is now employment manager of America Aviation Corp., Jamestown, N. Y.

Robert C. Simpson, recently with the armed services, has joined Higgins Aircraft, Inc., New Orleans, La., as assistant to the vice president, and will handle public relations and publicity.

William M. "Bill" Stabler has been promoted to service manager of the Liquid Cooled Engine Division of Aviation Corp., New York, N. Y.

Judd W. Moody has been appointed Eastern sales-engineering representative of Bendix Aviation, Ltd., North Hollywood, Cal., with headquarters in Pittsburgh.

At Interstate Aircraft and Engineering Corp., El Segundo, Cal., **James L. Bancroft** has been made assistant to the vice president and will be in charge of aircraft manufacture; **Oscar Crawford** will be superintendent of the aircraft division and **William Budd** has been made supervisor of the final assembly line in aircraft.

Moody

Aspelin

Pigue

Baker

Douglas Profit Down 39.7% On Sales Over $500,000,00

"Margin of net profits in the fiscal year of 1942 was only 2.2% of total sales for the period," Douglas Aircraft Company, Inc., Santa Monica, Cal., reveals in reporting net earnings of $11,054,620 on sales of more than $500,000,000 for the fiscal year ended Nov. 30, 1942.

This profit was 39.7% less than the $18,176,691 realized on sales of $180,940,110 in fiscal '41, which came mostly "from foreign business, on fixed-price contracts."

But backlog continues to be more than four times the total 1942 sales. Orders placed with Douglas by the U. S. Government through November, 1942, according to report, amounted to $2,373,100,000, and "Ten distinct models of speedy and powerful fighting and cargo airplanes are moving from Douglas factories to the battle fronts of this global war. Last year Douglas built more airplanes than its aggregate output from the date of the organization of the present company until 1942."

Douglas's total tax bill for the 1942 year was $40,950,000, which w 61% more than the $25,400,000 p in 1941. Wages and salaries in t amounted to $150,000,000, "nea fifty times" total dividends, and f every dollar paid in dividends "co pany returned $13.65 in taxes." A company also, report says, assig $1.17 to reserves, and spent anot $1.72 to "expand and improve present facilities for war produ tion," for that same dollar paid investors.

More than $5,000,000 of net profi was spent by Douglas on buildin and grounds, report continues, "insure and preserve the quality a vigor of the company's facilities a production of military and civil aircraft." And although busine "nearly trebled during the yea dividends in 1942 did not exce those paid in 1941. On Nov. 1942, stockholders received $5.00 share, or a total of $3,000,000 on t 600,000 shares outstanding on th date.

Clyne Crawford succeeds **Richard L. Swanson** as president of James town Aeronautical Corp., Jamestown, N. Y.

Robert Miller has been elected executive vice president and secretary o Menasco Manufacturing Co., Burbank, Cal.

Bert Borcherdt has been promoted from sales promotion and advertisin manager to plant manager of Arens Controls, Inc., Chicago, Ill., and succeeds **Robert T. Borcherdt,** resigned, who has joined the engineerin staff of Bell Aircraft Corp., Buffalo.

Among recent changes at United Aircraft Corp., were: **Sidney A. Stewar** has been elected a vice president and continues as general manager o the Hamilton Standard Propellers Division; **C. J. McCarthy** has bee elected a vice president, and has general supervision over airplane activ ties. He relinquishes his position as general manager of the Chanc Vought Aircraft Division; **J. Reed Miller,** a vice president, has been electe general manager of the Sikorsky Aircraft Division and **Joseph M. Ba** has been named assistant general manager; **Rex B. Beisel** has bee named acting general manager of the Chance Vought Aircraft Divisio and continues as engineering manager of United.

Aviation Corp., New York, N. Y., announces these transfers: W. **Hamilton,** from plant manager of Republic Aircraft Products, Detroit, t plant manager of Northern Aircraft Products, Toledo, where he will direc final tooling and production, and **A. C. Moore,** from production manage of American Propeller Corp., Toledo, to plant manager of Republic Air craft Products, Detroit.

Harry A. Oswald has been appointed manager of labor and industria relations in the Marine Division of Bendix Aviation Corp., Detroit, Mich

Fred J. Kennedy and **Harold A. Todd** have been elected to the boar of directors of Continental Motors Corp., Muskegon, Mich.

B. R. Sherrell, formerly with Vultee Aircraft, Inc., Vultee Field, Cal. succeeds Robert Porter as general manager of the aircraft division o Willys-Overland Motors, Inc., Toledo, O.

L. C. Milburn has been elected president and member of the executiv committee of Bellanca Aircraft Corp., New Castle, Del., and **Willard L. Yarnall,** formerly treasurer, succeeds Milburn as vice president and gen eral manager.

Paul S. Baker has been promoted from head of the aerodynamics and flight test section to engineering manager, and **James M. Shoemaker** from assistant to chief engineer at Chance Vought Aircraft division of United Aircraft Corp., East Hartford, Conn.

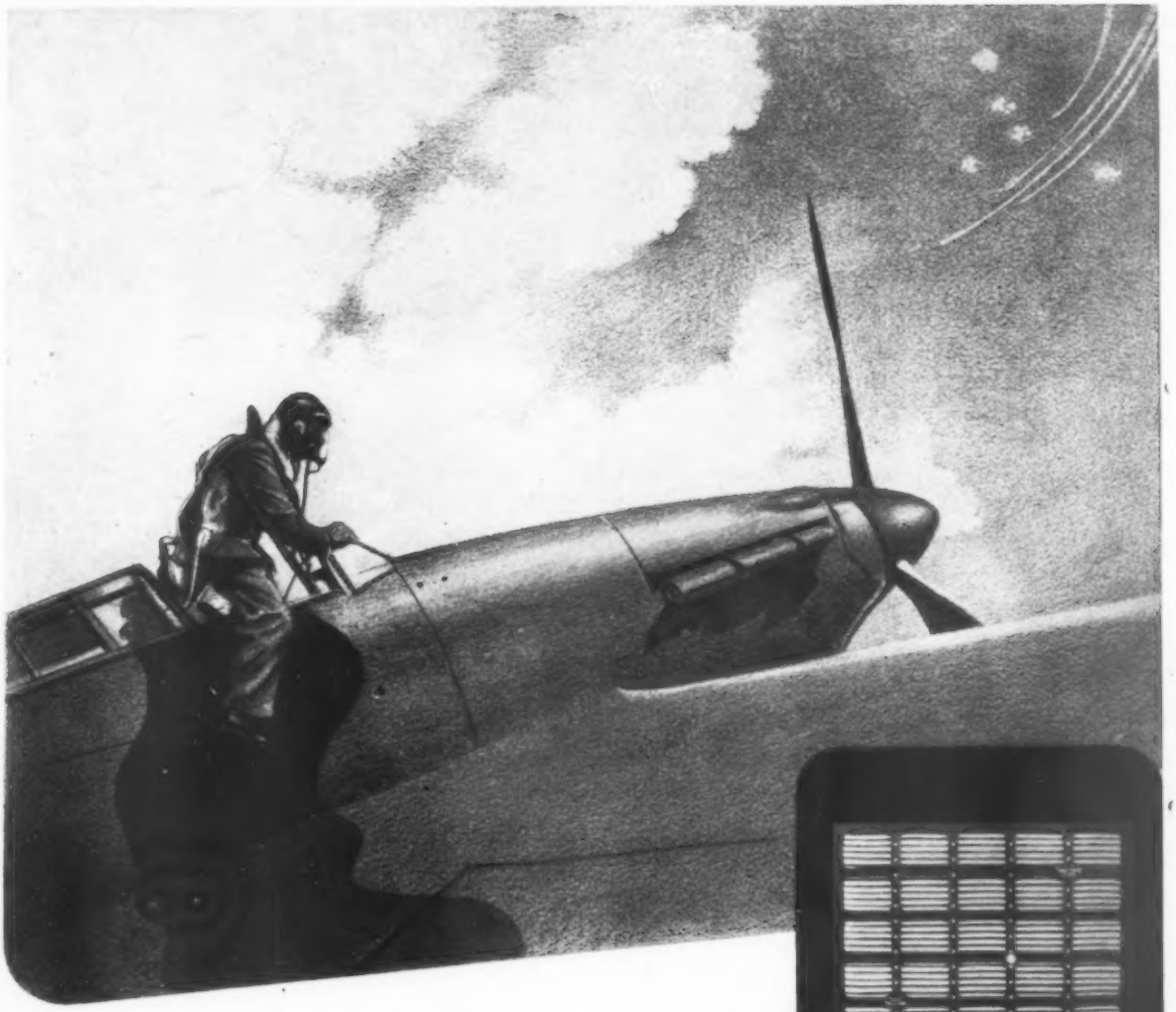
Leslie L. Aspelin, formerly with U. S. AAF, has been appointed director of engineering at Romec Pump Co., Elyria, O.

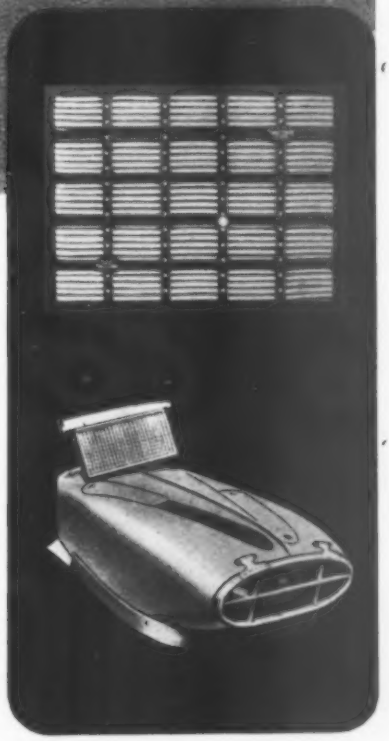
James A. Pigue, formerly safety director in the Tennessee division of Vultee Aircraft, Inc., Vultee Field, Cal., has been appointed special safety agent for the U. S. Dept. of Labor.

J. S. "Mac" McNally has succeeded **A. C. Moore** as production manager of American Propeller Corp., Toledo, O.

XUM

Efficient Filtration, another Battle won . . .





THERE are many other aspects of battle than the clash of steel, artillery duels or fights to the finish in the air. Ask the engineers what it means to battle against the havoc wrought by torrential rains, hurricanes and those bitter enemies frost, ice and snow.

There are yet other enemies to be conquered — dust and, especially in the North African and eastern battle areas, SAND — the relentless fighter against efficiency of aircraft and mechanised units of the Army.

Vokes Filters have helped to win these battles against Sand. Special types of Vokes Air, Oil and Fuel Oil Filters are fitted to machines for the R.A.F. and mechanised units operating in desert battle grounds to the satisfaction of Government experts, pilots and the men who keep aircraft, tanks, lorries, etc., fighting fit.

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1123 BAY STREET, TORONTO, CANADA
E. CANTIN, 101 PARK AVE., NEW YORK

New Higgins Plant

Final provisions of contract which will finance construction of a $23,000,000 factory for Higgins Aircraft, Inc., New Orleans, La. have been signed by Defense Plant Corp., according to press report. Army cargo planes are scheduled for manufacture in this new plant, construction on which is already under way, report said.

B-H

MANUFACTURERS of SHEET METAL and TUBULAR ACCESSORIES

MANIFOLDS

CONTRACTORS TO ALL LEADING ENGINE and PROPELLER MANUFACTURERS

B-H AIRCRAFT CO.

LONG ISLAND CITY NEW YORK

'Boypower' on Lockheed Hudson: Shown are some of the 500 boys filling jobs at Lockheed Aircraft Corp. and Vega Aircraft Corp., Burbank, Cal., by working four weeks and attending school four weeks. Shown, l. to r., are Lawrence Bennett, Gilbert Anderson and John Bunting, 16 year old Pasadena Junior College students, and R. A. Von Hake, vice president-manufacturing at Lockheed.

DPC Authorizations

Defense Plant Corp. has announced recent authorizations for executions and extensions of contracts with these firms:

STUDEBAKER Corp., South Bend, Ind., to provide additional facilities in Illinois, to cost about $11,200,000, raising overall commitment to approximately $83,750,000.

INTERCONTINENT AIRCRAFT Corp., Miami Springs, Fla., provision for facilities for a plant in Florida, which will make total commitment about $2,047,000.

REPUBLIC STEEL Corp., Cleveland, O., for further facilities at a plant in Illinois, to cost roughly $23,000,000, resulting in total commitment for this project of approximately $79,250,000.

FAIRCHILD AVIATION Corp., Jamaica, L. I., N. Y., provision for additional equipment for a plant in New York state at a cost of approximately $65,000, resulting in total commitment of about $450,000.

AMERICAN AVIATION Corp., Jamestown, N. Y., to provide equipment at a plant in New York state at a cost of about $75,000.

GENERAL MOTORS Corp., Detroit, Mich., additional plant facilities in Indiana and Michigan, to cost roughly $3,500,000, making final commitment about $63,000,000.

LAWRANCE ENGINEERING AND RESEARCH Corp., Linden, N. J., additional equipment for a plant in New Jersey, which will make total commitment about $1,600,000.

AMERICAN ROLLING MILL Co., Middletown, O., equipment for a plant in Kentucky at a cost of approximately $495,000.

GOODRICH AIRCRAFT Corp., Akron, O., additional facilities at a plant in Ohio, costing about $2,140,000, and making overall commitment $3,600,000.

SKF INDUSTRIES, Inc., Philadelphia, Pa., additional plant facilities in Pennsylvania at a cost approximating $3,000,000, resulting in overall commitment of about $12,000,000.

CURTISS-WRIGHT Corp., New York, N. Y., provision for additional plant facilities in New York state costing about $4,000,000, making total commitment approximately $36,900,000.

AERONCA AIRCRAFT Corp., Middletown, O., further facilities at a plant in Ohio, to cost about $280,000, making final commitment approximately $1,115,000.

BELLANCA AIRCRAFT Corp., New Castle, Del., additional facilities at a plant in Delaware, which will make total commitment about $1,375,000.

AMERICAN EXPORT AIRLINES, Inc., New York, N. Y., facilities in New York state, costing about $925,000.

McDONNELL AIRCRAFT Corp., St. Louis, Mo., additional equipment at a plant in Missouri, to cost about $150,000, and making overall commitment roughly $520,000.

AUTO-LITE Co., Toledo, O., plant facilities in New York and Ohio, at a cost of about $950,000.

RYAN AERONAUTICAL Co., San Diego, Cal., additional equipment and machinery in a plant in California, costing about $265,000, resulting in total commitment of $1,330,000.

BENDIX AVIATION Corp., Detroit, Mich., for further plant facilities in New Jersey and Pennsylvania, to cost approximately $285,000, making total commitment of $49,500,000.

CARDOX Corp., Chicago, Ill., for additional plant facilities in Oklahoma, costing about $100,000, and making total commitment roughly $1,175,000.

DOUGLAS AIRCRAFT Co., Inc., Santa Monica, Cal., further facilities at a plant in California, to cost about $185,000, and causing final commitment of about $635,000. Also, for additional facilities at a plant in California, which will cost about $3,890,000, and result in total commitment for this purpose of about $6,135,000.

DETROIT BROACH Co., Inc., Detroit, Mich., for additional machinery in a plant in Michigan, costing about $37,000, making final commitment about $260,000.

ROHR AIRCRAFT Corp., Chula Vista, Cal., for additional facilities in California at a cost of roughly $640,000, resulting in total commitment of about $2,500,000.

WESTON ELECTRICAL INSTRUMENT Corp., Newark, N. J., to provide further plant facilities in New Jersey at a cost of about $690,000 making total commitment about $1,850,000.

BOEING AIRCRAFT Co., Seattle, Wash., for additional equipment in a plant in Washington, to cost about $2,300,000, which will make final commitment of $2,800,000.

KELLETT AUTOGIRO Corp., Philadelphia, Pa., to provide further equipment for a plant in Pennsylvania, costing approximately $56,000, making total commitment of $440,000.

COLUMBIA STEEL Co., San Francisco, Cal., providing additional facilities at plants in Utah, approximating $3,300,000, resulting in final commitment of about $12,500,000.

FAIRCHILD ENGINE AND AIRPLANE Corp., New York, N. Y., for additional machinery and equipment for a plant in New York state, to cost about $750,000, making final commitment about $8,900,000.

INTERSTATE AIRCRAFT AND ENGINEERING Corp., El Segundo, Cal., providing further facilities in Illinois at a cost of about $220,000, resulting in total commitment of about $910,000.

REPUBLIC AVIATION Corp., Farmingdale, L. I., N. Y., to provide for building conversion, machinery and equipment to subcontractors in various states at a cost of approximately $18,000,000.

Lockheed-Vega Start Boys on '4-4' Pla

Use of 400 boys, of 16 and years, as aircraft workers on "four-and-four" plan, has been announced by Lockheed Aircraft Co and Vega Aircraft Corp., Burban Cal.

This plan, started by these firm in February, was worked out wi the cooperation of officials of t Burbank and Pasadena school sy tems. On a twelve-month sche year, boys participating atte school four weeks and work fo weeks, thus alternating on 200 a sembly line jobs. Consent of pare must be obtained, and hiring done only through the school sy tems.

Boys work eight hours, during t day shift only. They start at th regular rate of 60c an hour, an receive automatic increases ever four weeks until their rate is 7 an hour. After this, wage increase depend upon skill and merit. Mo boys in this first group are doin assembly line work, and are shifte from job to job so as to make po sible placing them where they a best suited.

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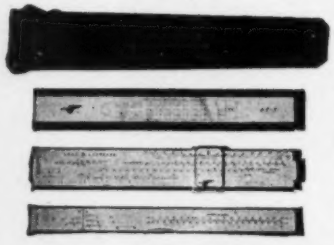

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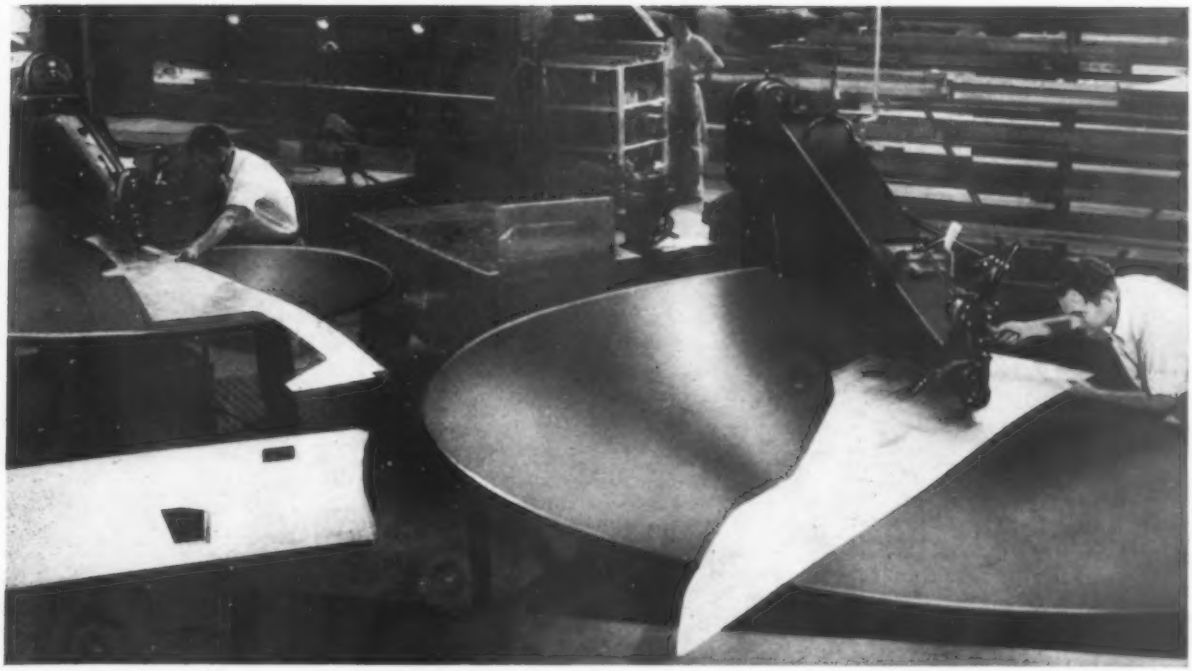

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Maintenance and Handling Equipment . . . Collateral Engineering Service

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On the Labor Front

BENDIX AVIATION CORP.
Employes at Brooklyn, N. Y., plant halted work to demand Army-Navy take over plant. Claimed wage schedule and classification contract signed in May had not been put into effect. Company said management had never refused to negotiate contract but "classification of employes is still pending before NWLB and we must await their decision."

BROWN & SHARPE MFG. CO., Providence, R. I.
NWLB wired 200 employes in supply department to end at once an IAM-AFL strike caused by union's objection to company's classification system.

CHANDLER-EVANS CORP., South Meriden, Conn.
NWLB granted bonus of 14% to all swing shift employes to compensate for reduction in earnings from ban on overtime.

CONSOLIDATED VULTEE AIRCRAFT CORP., Ft. Worth, Tex.
Employes voted for representation by IAM-AFL.

GENERAL MOTORS CORP.

MANNING, MAXWELL & MOORE, INC., Muskegon, Mich.
Wage dispute certified to NWLB.

GLENN L. MARTIN CO., Baltimore, Md.
Company discharged 239 workers as chronic absentees. UAW-CIO petitioned NLRB for a collective bargaining election at all Martin plants in area.

REPUBLIC AIRCRAFT CORP.
Two disputes certified to NLRB; at Detroit plant, over equal pay for both sexes and at Farmingdale plant over dismissal of workers. UAW-CIO employes involved in both controversies.

REVERE COPPER & BRASS, INC., Baltimore, Md.
Company ordered by NLRB to dismiss petition filed by International Brotherhood of Firemen, Oilers & Railroad Shop Laborers-AFL.

UNITED AIRCRAFT CORP.
Vought-Sikorsky Division (now changed in name) was advised that NWLB refused approval of wage increases sought by company for trainees. Company wanted to equalize trainee's pay with that of new employes.

UNITED STATES RUBBER CO.
NWLB disapproved wage agreement between company & URW-CIO at Woonsocket plant including 5c hourly increase in hiring wage.

Financial Briefs

CANADIAN civil air lines, over... censed routes, had during Nove... 1942 net operating revenue of $3... compared with a debit of $40,410 in... '41 month. Total operating reve... amounted to $960,963 against $... and operating expenses were $... contrasted with $628,711.

HAYES MANUFACTURING C... Grand Rapids, Mich., has announced ... the quarter ended Dec. 31, 1942 ... profit of $181,762, equal to 21c a s... on 875,000 outstanding, which compa... with net profit of $71,235, or 8c, ... the same quarter in 1941. Reserve ... Federal income and excess profits ta... for the quarter and the full ... amounted to $726,160.

LOCKHEED AIRCRAFT Corp., Bu... bank, Cal., directors have declared di... dend of 50c, which was payable Mar... 29 to holders of record March 19.

NATIONAL AIRLINES, Inc., Jac... sonville, Fla., for the seven months ... Jan. 31, 1943, reports net profit ... $105,387, equal to 39c each on 270,... shares, against $65,726 or 24c for t... similar period a year ago. Income ... taxes totaled $193,000.

STEWART-WARNER Corp., Chica... Ill., and subsidiary companies, repo... for 1942 profit carried to earned surp... amounted to $1,590,454, equal to $1.... per share of stock outstanding. Pro... vision for Federal income and excess ... profits taxes was $19,400,000. Balance ... sheet as of Dec. 31, 1942 shows tot... assets of $42,667,907, and current asse... of $32,206,948. Current liabilities ... listed as $18,074,413.

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